REPORT DOCUMENTATION PAGE

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Davis Highway, Suite 1204 Arlington, VA 22202-4302 1. AGENCY USE ONLY (Leave blank)	2. REPORT DATE	3. REPORT TYPE AN	
1. AGENCY USE ONLY (Leave blank)	JUNE 1995		
4. TITLE AND SUBTITLE	90ME 1999	rmai kemedi	al Investigation 15. FUNDING NUMBERS
Installation Restoration Program Alpena Combat Readiness Train Alpena MI		on Report Vol. III	PRTDVG957097
6. AUTHOR(S) N/A			
7. PERFORMING ORGANIZATION NAME	(S) AND ADDRESS(ES)		8: PERFORMING ORGANIZATION REPORT NUMBER
EARTH TECH Oak Ridge TN			REPORT NUMBER
9. SPONSORING / MONITORING AGENCY	NAME(S) AND ADDRESS(E	S)	10. SPONSORING / MONITORING
Hazardous Waste Remedial Act Martin Marietta Energy System Oak Ridge, TN 37831	ons Program		AGENCY REPORT NUMBER RG-07-159-0370
11. SUPPLEMENTARY NOTES	Q E	LECTE JL 1 4 1995	
12a. DISTRIBUTION / AVAILABILITY STAT	EMENT		12b. DISTRIBUTION CODE
Approved for public release; distribution is unlimited		STATE STATE OF THE	
13. ABSTRACT (Maximum 200 words) Remedial Investigation Report of A remedial investigation was percontamination at the sites. The secondary Property of Area: Site 6 Former Landfill: Site 6 Former La	rformed on 9 sites at the sites involved in this in r Garage; Site 4 Third I	te Alpena CRTC to de vestigation include: S Fire Training Area; S	termine the extent of Site 1 POL Storage Area; Site ite 5 Second Fire Training

DTIC QUALITY INSPECTED 5

14. SUBJECT TERMS			15. NUMBER OF PAGES
Installation Restoration Pro	gram; Air National Guard; I	Remedial Investigation;	290
Alpena CRTC; Alpena MI	ANG		16. PRICE CODE
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	18. SECURITY CLASSIFICATION	19. SECURITY CLASSIFICATION	20. LIMITATION OF ABSTRACT
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Waste Storage Area. Soil and groundwater contamination above state action levels was found at the

sites. An FS has been initiated.

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INSTALLATION RESTORATION PROGRAM

FINAL REMEDIAL INVESTIGATION REPORT

VOLUME III: APPENDICES A - I

ALPENA COMBAT READINESS TRAINING CENTER
ALPENA COUNTY REGIONAL AIRPORT, MICHIGAN AIR NATIONAL GUARD
ALPENA, MICHIGAN

JUNE 1995



HAZARDOUS WASTE REMEDIAL ACTIONS PROGRAM
Environmental Restoration and Waste Management Programs
Oak Ridge, Tennessee 37831-7606
managed by MARTIN MARIETTA ENERGY SYSTEMS, INC.
for the U.S. DEPARTMENT OF ENERGY under contract DE-AC05-840R21400

REMEDIAL INVESTIGATION REPORT ALPENA COMBAT READINESS TRAINING CENTER MICHIGAN AIR NATIONAL GUARD ALPENA, MICHGIAN

Volume III

Appendix

Field Change Request Forms Α **Aquifer Testing Results** В Soil Boring Log; Monitoring Well Construction Forms and Technical Results С Analytical Results; Initial Site Screening D Analytical Results; On-site Screening E Surface Water and Sediment Sampling Forms F Monitoring Well Development and Sampling Forms G Surveying Data Н Analytical Results; Investigation Derived Wastes - Decontamination Water and Soil Cuttings Accesion For NTIS CRASI DTIC TAG Unannounced Justification

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Appendix A: Field Change Request Forms

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FIELD CHANGE REQUEST FORM

Field Change No. ____

Page of
PROJECT Phelps Collins ANG RI, Alpena, Mich PROJECT NO. 931800-12 APPLICABLE DOCUMENT: Final RI SAP
page 2-29 of SAP states "shoreline sampling will be cored using a minuteman partable dull appearature" Field team snagests using a sediment (sludge sampling hand auger. REASON:
REASON: uncompacted, saturated sedements in the bottom of the sinkhole will not allow for a borehole to Stay ofen; using a minutenan would not allow Bor sampling RECOMMENDED DISPOSITION: Use hand anger: with sedement certain attachment
Samples will be collected in Sisteel liners if possible; Placed into jars if sleeves will not work IMPACT ON PRESENT AND COMPLETED WORK: no cost change; however, deeper Sample collection (3 to 5 feet) will not be practical
If the holes will not stay open. FINAL DISPOSITION:
REQUESTED BY: FIELD / PROJECT MANAGER: APPROVALS: HAZWRAP PROJECT MANAGER:

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	Corporation	

neit energe ite.	Field change No.	2
Page /oi	Page	

Field Change Request

Project name Phelps Collins ANG Project Number 93 (800-
Applicable Document RI SAP Final Date 8/11/93
Where possible Description: Surface soil samples will be collected Using the drill rig, 3", 2-Poot long split spoons equipped w/ stainless steel liners; SAP says we will Minorchange Major change Major project impact Requested by: Reason for change: All sand samples will be collected with the
Same methods: same consales, etc. Samples will be obtained from the first foot:
Recommended disposition: Approve as recommended
Impact on present and completed work: no impact - Samples will still be representate of surface conditions and volatile, compounds in the letter retained.
Accepted Rejected Signature Project QAQC Officer Accepted Project QAQC Officer
(Required prior to Implemenation of major changes) Accepted Rejected Signature Date
Accepted Rejected Signature Program Manager Accepted Signature Program QA/QC Officer Date Program QA/QC Officer
(Required prior to implementation of changes with major project Impact)
/ Approved Rejected Signature CLIENT Project Manager
Final Disposition
Signature — Date — Formation saving

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	Corporation

Field change No.	3
Pageof	

Field Change Request

		2.14	Project Number 9	31800-12
Project name Phel	ps Collins	ANG Dec. 1992		1
Applicable Documer	IFINEL SAP	Dec. 1112	Date Aug 24	,1715
Shirtinge approximations change ". Minor change Requested by:	Jack Bries with the second of completed work:	lajor change [] egel 11s are allowed to much mobil, ya h muchs. 48 has	e approx 48 hr o cor to sampling Major p	Cher development roject impact week offer
Accepted	Rejected Rejected	Pro	F MC Consider and a QAQC Officer	- Date 8-25-9-
Accepted			a dade ones	
(Required prior to In	replemenation of majo	Signature	ogram Manager	_ Date
Accepted	Rejected	Signature Prog	ram QA/QC Officer	_ Date
(Required prior to in	noiementation of char	nges with major project im	pact)	
Approved	Rejected	C'analuse	NT Project Manager	Date
Final Disposition		•	·	
Signature —		Da	te ———	Form3E-1
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Appendix B: Groundwater and Surface Water Elevation Measurements and Aquifer Testing Results

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ATION ID	NUMBER E	ATE	P OF PRO CASING ;			OUNDWATER ELEVATION
		110	P OF PRO CASING,	678.23	1.64	676.59
SITE 1	S1MW1	SEPT. 12, 1993		681.16	3.77	677.39
	S1MW2	SEPT. 12, 1993		680.55	3.4	677.15
	S1MW3	SEPT. 12, 1993		678.94	2.74	676.2
	S1MW4	SEPT. 12, 1993		680.66	4.46	676.2
		SEPT. 12, 1993		679.28	3.56	675.72
		SEPT. 12, 1993		677.74	3.19	674.55
		SEPT. 12, 1993		680.2	4.99	675.21
		SEPT. 12, 1993			6.35	673.92
	S1MW14	SEPT. 12, 1993		680.27	5.93	676.69
SITE 2	MP2MW1	SEPT. 12, 1993		682.62	8.3	675.57
	MP2MW2	SEPT. 12, 1993	683.87	683.78	7.92	675.51
	MP2MW3	SEPT. 12, 1993	683.43	683.28	8.31	675.28
	MP2MW4	SEPT. 12, 1993	683.59	683.44	8.07	675.4
	MP2MW5	SEPT. 12, 1993	683.47	683.39	7.99	674.86
	MP2MW6	SEPT. 12, 1993		682.85	6.72	676.06
	MP2MW7	SEPT. 12, 1993		682.78	15.11	676.62
		SEPT. 12, 1993		691.73		677.38
SITE 3	CG3PZ1	SEPT. 12, 1993	687.96	687.87	10.58	676,29
	CG3MW1	SEPT. 12, 1993	694.41	694.3	18.12	676.5
	CG3MW2		690.01	689.8	13.51	676.42
	CG3MW3	SEPT. 12, 1993	694.13	694	17.71	676.4
	CG3MW4	SEPT. 12, 1993	694.26	694.09	17.86	676.52
	CG3MW5	SEPT. 12, 1993	007.20	691.29	14.77	675.64
	CG3MW6	SEPT. 12, 1993		690.14	14.5	667.23
	CG3MW7	SEPT. 12, 1993	690.24	684.75	23.01	659.61
SITE 4	TF4MW1	SEPT. 12, 1993	688.63	685.91	29.02	658.06
	TF4MW2	SEPT. 12, 1993	685	688.41	26.94	
	TF4MW3_	SEPT. 12, 1993		690.05	27.78	658.36
	TF4MW4	SEPT. 12, 1993	686.14	680.93	6.88	674.15
SITE 5	SF5MW1	SEPT. 12, 1993	681.03	680.21	5.97	675.32
	SF5MW2	SEPT. 12, 1993	681.29	682.14	7.67	674.6
	SF5MW3	SEPT, 12, 1993	682.27	681.78	7.65	674.32
	SF5MW4	SEPT. 12, 1993	681.97	680.59	6.21	674.38
	SF5MW5	SEPT. 12, 1993		680.52	6.26	674.26
	SF5MW6	SEPT. 12, 1993		681.26	7.06	674.2
	SF5MW7	SEPT. 12, 1993		681.12	7.05	674.07
	SF5MW8	SEPT. 12, 1993			7.3	673.94
	SF5MW9	SEPT. 12, 1993		681.24	18.44	672.1
SITE 6	LF6MW1	SEPT. 12, 1993	690.54	690.38	12.33	672.68
SITEO	LF6MW2	SEPT. 12, 1993	685.01	684.86	15.21	671.93
	LF6MW3	SEPT. 12, 1993	687.14	686.97	11.84	672.75
	LF6MW4	SEPT. 12, 1993		684.59	10.64	673.07
	LF6MW5	SEPT. 12, 1993		683.71	16.01	671.17
	LF6MW6	SEPT. 12, 1993		687.18	11.89	673.12
		SEPT. 12, 1993		685.01		673.34
	LF6MW8	SEPT. 12, 1993		684.21	10.87	671.7
	LF6MW9	SEPT. 12, 1993		682.7	11	676.96
	LF6MW10	SEPT. 12, 1993	687.15	687.11	10.19	675.31
SITE 8	HN8MW1	SEPT. 12, 1993	693	692.91	17.69	676.03
	HN8MW2	SEPT. 12, 1993	693.65	693.47	17.62	676
	HN8MW3		693.75	693.84	17.75	676.12
	HN8MW4	SEPT. 12, 1993		687.49	11.37	673.06
	HN8MW5	SEPT. 12, 1993	691	690.79	17.94	668.21
SITE 9	RT9MW1	SEPT. 12, 1993	692.85	692.63	24.64	670.72
	RT9MW2		685.5	685.22	14.78	667.17
	RT9MW3	SEPT. 12, 1993	687.77	687.52	20.6	
	RT9MW4		687.85	687.61	21.08	666.77
	RT9MW5		007.00	685	14.42	670.58
	RT9MW6			BENCH MARK	MEASUREMENT	SURFACE WATER ELEVA
LOCATION	ID_	DATE		651.31		651.2
SINKHOLE				651.31		651.1
SINKHOLE				651.31		648.7
SINKHOLE				651.31		651.5
SINKHOLE				651.31		652.5
SINKHOLE				651.31		649.7
SINKHOLE					2.58	671.6
	T Gauge 3	AUG. 1993		674.18	4.58	
	Gauge 2	AUG. 1993		676.14		
MODEL				1 6/5.04	3.31	674.40
NORTH	6 Gauge 4	AUG. 1993		674.72	3.3	671.42

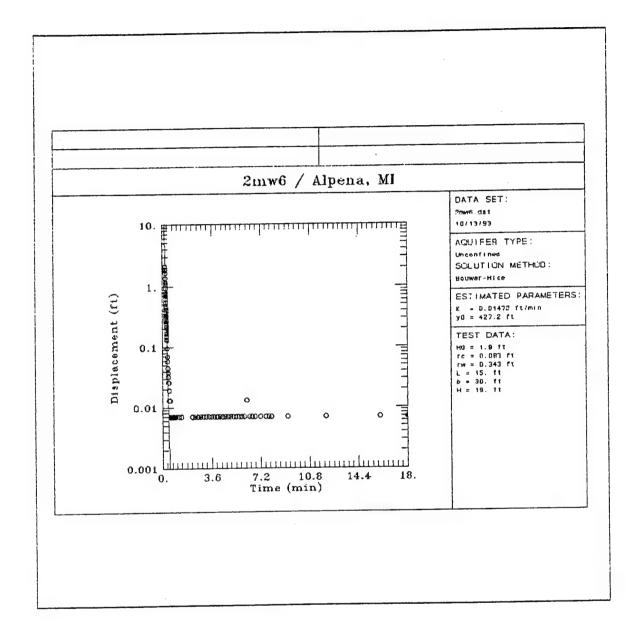
Note:TOP OF PRO CASING is from November 1987 survey data.

TOP OF PVC RISER is from August 1993 survey data.

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Aquifer Testing Results

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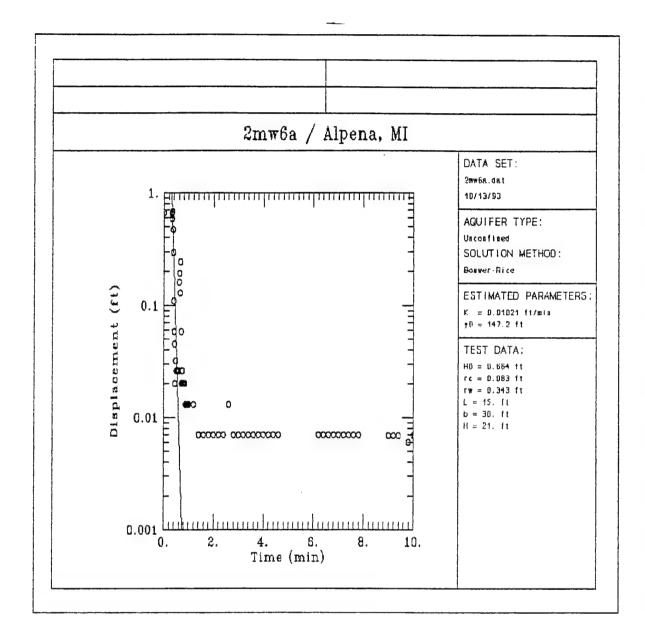


SITE 2 MONITORING WELL #6 (SLUG IN)

TIME	DRAWDOWN	WEIGHT
(Min) 0.2233 0.2266 0.23 0.2333 0.25 0.2533	(++)	
0.2233	2.118	1
0.2266	1.87	1
0.23	1.659	1
0.2333	1.366	1
0.25	1.168	1
0.2533	1.085	1
0.2566	0.944	1
0.26	0.944 0.804001	1
0.2633	0.771999	1
0.2666	0.696001	1
0.27	0.625	1
0.2733	0.549	1
0.2766	0.485	1
0.28	0.447	1
0.2833	0.408001	1
0.2866	0.370001	1
0.29	0.332001	1
0.2933	0.306	1
0.2966	0.281	1
0.3	0.254999	1
0.3033	0.696001 0.625 0.549 0.485 0.447 0.408001 0.370001 0.332001 0.306 0.281 0.254999 0.236 0.217001	1
0.3066	0.217001	1
0.31	0.204	1
0.31 0.3133 0.3166	0.191999 0.179001	1
0.3166	0.179001	1
0.32	0.166 0.153 0.146999 0.134001 0.128	1
0.3233	0.153	1
0.3266	0.146999	1
0.33	0.134001	1
0.3333	0.128	1
0 35	0 0060006	1
0.3666	0.0699996	1
0.3833	0.0580005	1
0.4	0.045	1
0.4166	0.0699996 0.0580005 0.045 0.038 0.0319995	1
0.4333	0.0319995	1
0.45	0.0260009	1
0.4666	0.0260009	1
0.4833	0.0190009	1
0.5	0.0190009	1
0.5166	0.0130004	1
0.5333	0.0130004	1
0.55	0.0130004	1
0.5666	0.0130004	1
0.5833	0.00699986	1
0.6	0.00699986	1
0.6166	0.00699986	1
0.6333	0.00699986	1
0.65	0.00699986	1
0.6666	0.00699986	1
0.6833	0.00699986	1
0.7	0.00699986	1

SITE 2 MONITORING WELL #6 (SLUG IN)

TIME	DRAWDOWN	WEIGHT
(MIN)	(++)	
0.7166	0.00699986	1
0.7333	0.00699986	1
0.75	0.00699986	1
0.7666	0.00699986	1
0.7833	0.00699986	1
0.8	0.00699986	1
• • • •	0.00699986	1
	0.00699986	1
	0.00699986	1
	0.00699986	1
	0.00699986 0.00699986	1
7 1 7	0.00699986	1
0.9166 0.9333	0.00699986	1
0.95	0.00699986	1
0.9666	0.00699986	1
0.9833	0.00699986	1
1	0.00699986	1
1.2	0.00699986	1
	0.00699986	1
	0.00699986	1
	0.00699986	1
	0.00699986	1
2.8	0.00699986	1
3	0.00699986	1
3.2	0.00699986	1
3.4	0.00699986	1
3.6	0.00699986	1
3.8	0.00699986	1
4	0.00699986	1
	0.00699986	1
	0.00699986	1
	0.00699986	1
4.8	0.00699986	1
5	0.00699986	1
5.2	0.00699986	1
5.4	0.00699986	1
5.6	0.00699986	1
5.8	0.00699986 0.00699986	1
6 6.2	0.0130004	1
6.4	0.00699986	1
6.6	0.00699986	1
6.8	0.00699986	1
7.2	0.00699986	1
7.6	0.00699986	1
7.8	0.00699986	1
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18	0.00699986	1

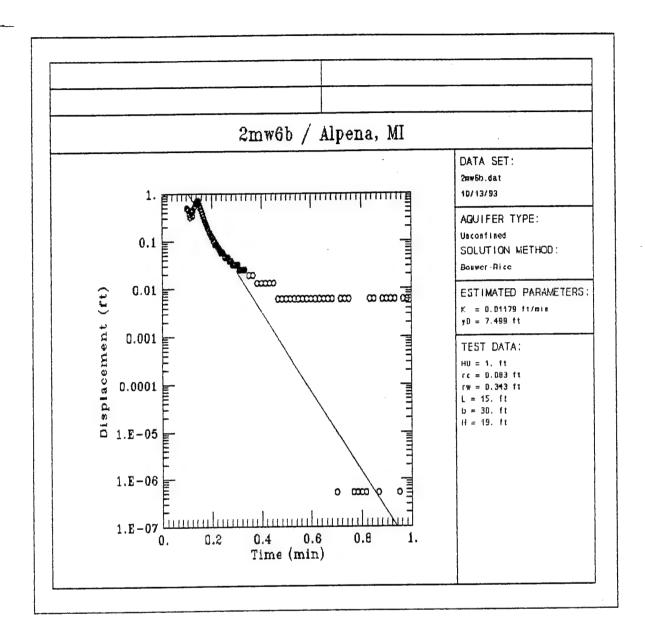


SITE 2 MONITORING WELL #6 (SLUG IN)

TIME	DRAWDOWN (++)	WEIGHT
0.3266	0.664 0.638 0.587	1
0.33	0.638	1
0.3333	0.030	1
0.35	0.677	1
0.3666		1
0.3833		1
		1
		1
• • • •		1
	0.0200005	1
		1
	0.0319996	1
0.4833	0.0319996	1
0.5 0.5166	0.0259991 0.0259991 0.0259991	1
0.5333	0.0259991	1
0.55	0.0259991	ī
0.5666	0.0259991	1
	0.0259991	1
	0.0259991	
	0.16	ī
0.6333	0.191999	1
0.65	0.128	ī
0.6666	0.243	1
0.6833	-0.0310001	1
0.0033	0.0580006	1
0.7166	0.0200005	1
0.7333		1
0.75	0.0259991	1
	0.0200005	1
	0.0200005	1
	0.0200005	1
0.8166	0.0200005	1
0.8166 0.8333	0.0200005	1
0.85	0.0200005 0.0130005	1
0.8666	0.0130005	1
0.8833	0.0130005	1
0.9	0.0130005	1
0.9166	0.0130005	1
0.9333	0.0130005	1
0.95	0.0130005	1
0.9666	0.0130005	1
0.9833	0.0130005	1
1	0.0130005	1
1.2	0.0130005	1
1.4	0.00699997	1
1.6	0.00699997	1
1.8	0.00699997	1
2	0.00699997	1
2.2	0.00699997	1
2.4	0.00699997	1
2.6	0.0130005	1
2.8	0.00699997	1

SITE 2 MONITORING WELL #6 (SLUG IN)

TIME	DRAWDOWN	WEIGHT
(WIV)	(++)	
3	0.00699997	1
3.2	0.00699997	1
3.4	0.00699997	1
3.6	0.00699997	1
3.8	0.00699997	1
4	0.00699997	1
4.2	0.00699997	1
4.4	0.00699997	1
4.6	0.00699997	1
6.2	0.00699997	1
6.4	0.00699997	1
6.6	0.00699997	1
6.8	0.00699997	1
7	0.00699997	1
7.2	0.00699997	1
7.4	0.00699997	1
7.6	0.00699997	1
7.8	0.00699997	1
9	0.00699997	1
9.2	0.00699997	1
9.4	0.00699997	1
9.8	0.00699997	1
10	0.00699997	1



SITE 2 MONITORING WELL #6 (SLUG OUT)

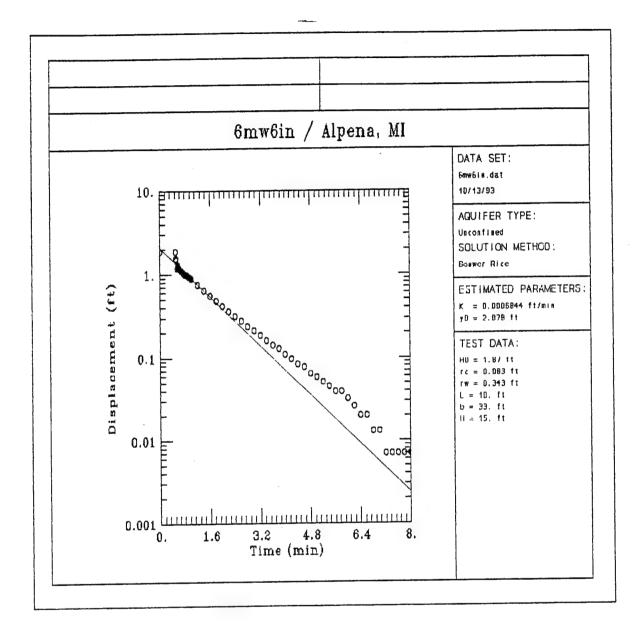
TTMR	DRAWDOWN (++) 0.484999 0.472001 0.446999 0.376 0.319001 0.427001 0.402001 0.338 0.434001 0.510001	WEIGHT
(ω, σ)	(f+)	WEIGHT
0.1	0.484999	1
0.1033	0.472001	1
0.1066	0.446999	1
0.11	0.376	1
0.1133	0.319001	1
0.1166	0.427001	1
0.12	0.402001	1
0.1233	0.338	1
0.1266	0.402001 0.338 0.434001 0.510001 0.542	1
0.13	0.510001	1
0.1333	0.510001 0.542 0.612 0.644 0.689 0.689 0.644 0.560999 0.484999	1
0.1366	0.612	1
0.14	0.644	1
0.1433	0.689	1
0.1466	0.689	1
0.15	0.644	1
0.1533	0.560999	1
0.1566	0.484999	1
0.15 0.1533 0.1566 0.16 0.1633 0.1666 0.17	0.415	1
0.1633	0.415 0.364001 0.319001 0.286999 0.255 0.23	1
0.1666	0.319001	1
0.17	0.286999	1
0.1733	0.255	1
0.1766	0.23	1
0.18	0.210999	1
0.1833	0.191001	1
0.1866	0.191001 0.171999 0.153 0.147 0.133999 0.121001 0.115 0.102 0.0959993 0.0830007 0.0830007	1
0.19	0.153	1
0.1933	0.147	1
0.1966	0.133999	1
0.2	0.121001	1
0.2033	0.115	1
0.2066	0.102	1
0.21	0.0959993	1
0.2133	0.0830007	1
0.2166	0.0830007 0.0830007	1
0.22	0.0830007	1
0.2233	0.0760007	1
0.2266	0.0700002	1
0.23	0.0700002	1
0.2333	0.0639997	1
0.2366	0.0569997	1
	0.0569997	1
	0.0569997	1
	0.0569997	1
	0.0509992	1
	0.0450006	1
	0.0450006	1
	0.0450006	1
	0.0450006	1
0.2666	0.0450006	1
0.27	0.0380006	1

SITE 2 MONITORING WELL #6 (SLUG OUT)

TIME (Min) 0.2733	DRAWDOWN	WEIGHT
(MIN)	(f+) 0.0380006 0.0380006 0.0380006 0.0320001 0.0320001	
0.2733	0.0380006	1
0.2766	0.0380006	1
0.28	0.0380006	1
0.2833	0.0320001	1
0.2866	0.0320001	1
0.29	0.0320001	1
0.2933	0.0320001	1
		1
	0.0320001	1
0.3033	0.0320001	1
0.3066	0.0320001	1
0.31	0.0250001	1
0.3133	0.0250001	1
0.3166	0.0250001	1
0.32	0.0250001	1
0.3233	0.0250001	1
0.3266		1
0.33	0.0250001	1
		1
0.35	0.0189996	1
0.3666	0.0189996	1
U 3833	0.0129991	1
0.4	0.0129991 0.0129991 0.0129991 0.0129991	1
0.4166	0.0129991	1
0.4333	0.0129991	1
0.45	0.0129991	1
0.4666	0.0129991 0.00599913 0.00599913	1
0.4833	0.00599913	1
0.5	0.00599913	1
	0.00599913	1
0.5333	0.00599913	1
0.5666	0.00599913 0.00599913 0.00599913 0.00599913	1
0.5833	0.00599913	1
0.6	0.00599913	1
0.6166	0.00599913 0.00599913 0.00599913	1
0.6333	0.00599913	1
0.65	0.00599913	1
0.6666	0.00599913	1
0.6833	0.00599913	1
0.7166	0.00599913	1
0.7333	0.00599913	1
0.75	0.00599913	1
0.8333	0.00599913	1
0.85	0.00599913	1
0.8833	0.00599913	1
0.9	0.00599913	1
0.9166	0.00599913	1
0.9333	0.00599913	1
0.9666	0.00599913	1
0.9833	0.00599913	1
1	0.00599913	1

SITE 2 MONITORING WELL #6 (SLUG OUT)

TIME	DRAWDOWN (f+)	WEIGHT
(wiu)	•	_
2	-0.006	1
2.2	-0.006	1
2.4	-0.006	1
2.6	-0.006	.1
2.8	-0.006	1
3	-0.006	1
3.2	-0.006	1
3.4	-0.006	1
3.6	-0.006	1
3.8	-0.006	1
4	-0.006	1
4.2	-0.006	1
4.4	-0.006	1
4.6	-0.006	1
4.8	-0.006	1
5	-0.006	1
5.2	-0.006	1
5.4	-0.006	1
5.6	-0.006	1
5.8	-0.006	1
6	-0.006	1
6.6	-0.006	1
6.8	-0.006	1
7	-0.006	1

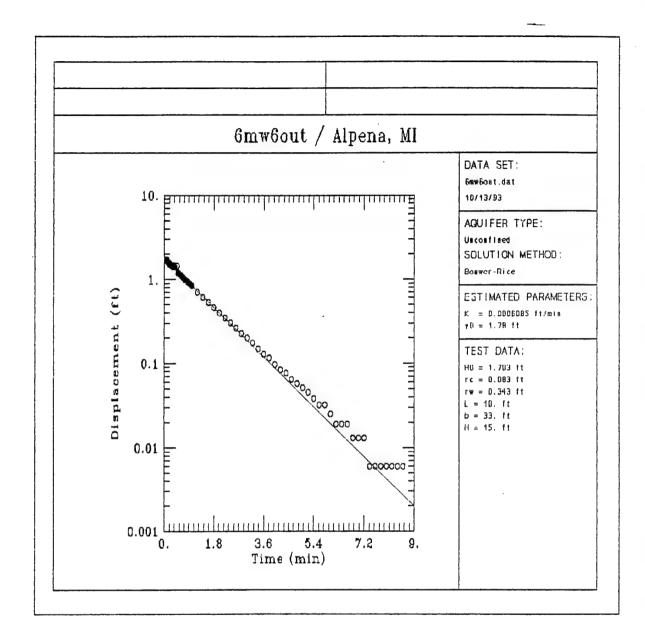


SITE 6 MONITORING WELL #6 (SLUG IN)

TIME	DRAWDOWN (++)	WEIGHT
0.5	1.87	1
U - 3 1 0 0	1.544	1
0.5333	1.474	1
0.55	1.193	1
0.5666	1.225	ī
	1.276	1
	1.213	1
	1.181	1
	1.162	1
	1.136	1
	1.123	1
0.6833	1.104	1
		1
0.7166	1.091 1.079 1.059	1
0.7333	1 050	1
0.75	1.04	1
	1.021	1
	1.002	1
	0.989	1
	0.989	1
	0.983	1
	0.983	1
0.8666	0.969999	1
0.8833	0.964001	1
	0.951	1
	0.938	1
	0.924999	1
	0.919001	1
	0.906	1
	0.893999	1
	0.881001	1
	0.001001	1
1.4	0.747 0.638	1
1.6	0.030	1
	0.549 0.479	1
	0.415001	1
	0.358	1
2.4	0.313	1
2.6	0.275	1
2.8	0.236	1
3	0.211	1
3.2	0.184999	1
3.4	0.16	1
3.6	0.141001	ī
3.8	0.128	ī
4	0.108999	1
4.2	0.0960007	1
4.4	0.0830002	1
4.6	0.0769997	1
4.8	0.0639992	1
5	0.0580006	1
5.2	0.0510006	1

SITE 6 MONITORING WELL #6 (SLUG IN)

TIME	DRAWDOWN	WEIGHT
(min)	(f+)	
5.4	0.0450001	1
5.6	0.0389996	1
5.8	0.0389996	1
6	0.0319996	1
6.2	0.0259991	1
6.4	0.0200005	1
6.6	0.0200005	1
6.8	0.0130005	1
7	0.0130005	1
7.2	0.00699997	1
7.4	0.00699997	1
7.6	0.00699997	1
7.8	0.00699997	1
8	0.00699997	1



SITE 6 MONITORING WELL #6 (SLUG OUT)

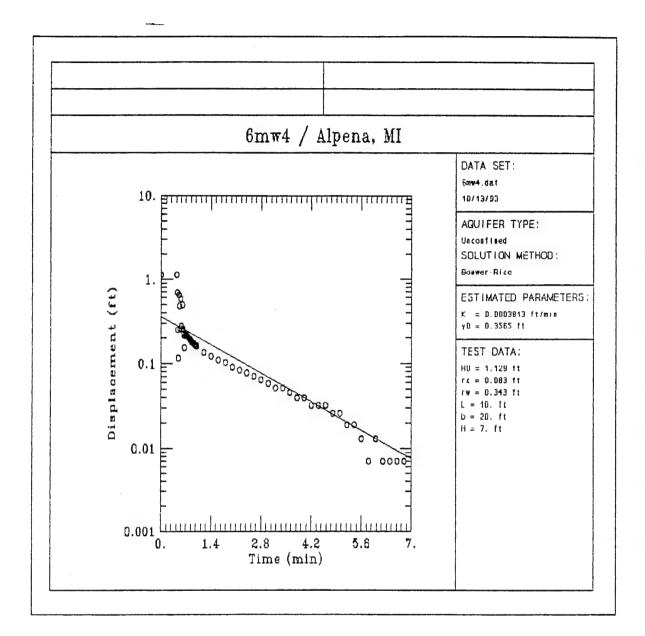
TIME	DRAWDOWN	WEIGHT
$(w_i u)$	(+1)	
0.1	1.703	1
0.1033	1.652	1
0.1066	1.652	1
0.11	1.652	1
0.1133	1.639 1.627	1
0.1166	1.627	1
0.12	1.627	1
0.1233	1.62	1
0.1266	1.614	1
0.13	1.607	1
	1.601	1
	1.595	1
0.14	1.588	1
0.1433	1.588	1
0.1466	1.588	1
0.15	1.582	1
0.1533	1.582	1
0.1566	1.582	1
0.16	1.569	1
0.1633	1.576	1
	1.576	1
0.17	1.576	1
	1.525	ī
	1.531	1
0.1766	1.518	ī
0.18	1.505	î
0.1833 0.1866	1.525	1
	1.531	1
0.19	1.531	ī
0.1933	1.525	ī
0.1966	1.531	ī
0.2	1.531	ī
0.2033	1.512	ī
0.2066	1.512	1
0.21	1.518	ī
0.2133	1.512	ī
0.2166	1.512	1
0.22	1.512	1
0.2233	1.499	1
0.2266		1
0.23	1.486	1
0.2333	1.48	1
0.2366	1.48	1
0.24	1.473	1
0.2433	1.467	i
0.2466	1.461	i
0.25	1.467	i
0.2533	1.461	1
0.2566	1.454	1
0.26	1.454	1
0.2633	1.448	1
0.2666	1.448	
0.27	1.442	1

SITE 6 MONITORING WELL #6 (SLUG OUT)

TIME	DRAWDOWN	WEIGHT
$(w^{i}v^{j})$	(f+)	
0.2733	1.442	1
0.2766	1.435	1
	1.435	1
	1.435	1
	1.429	1
	1.429	1
	1.429	1
	1.429	1
	1.429	1
	1.422	1
	1.41	1
	1.435	1
0.3133	1.422	1
0.3166	1.422	1
0.32	1.429	1
0.3233	1.422	1
0.3266	1.435	1
0.33	1.435	1
0.3333	1.448	1
0.35	1.422	1
0.3666	1.422	1
	1.416	1
0.4666	1.435	1
0.4833	1.199	1
0.5	1.193	1
0.5166	1.18	1
0.5333	1.167	1
	1.148	1
	1.135	1
	1.123	1
	1.11	1
	1.097	ī
	1.084	1
0.65	1.072	ī
0.6666	1.059	1
0.6833	1.046	1
0.7	1.033	ı 1
0.7166	1.021	1
0.7333	1.008	1
0.75	0.995	1
0.7666	0.989	1
0.7833	0.976	1
0.7033	0.963	1
0.8166	0.95	1
0.8333	0.944	ī
0.85	0.931	1
0.8666	0.918	1
0.8833	0.918	1
0.8833	0.899	1
0.9166	0.887	1
0.9333	0.88	1
0.95	0.867	1
0.33	0.00/	_

SITE 6 MONITORING WELL #6 (SLUG OUT)

TIME	DRAWDOWN	WEIGHT
(wiu)	(++)	
0.9666	0.855	1
0.9833	0.848	1
1	0.842	1
1.2	0.702	1
1.4	0.606	1
1.6	0.529	1
1.8	0.459	1
2	0.395	1
2.2	0.344	1
2.4	0.3	1
2.6	0.261	1
2.8	0.223	1
3	0.198	1
3.2	0.172	1
3.4	0.147	1
3.6	0.127	1
3.8	0.115	1
4	0.0960002	1
4.2	0.0829997	1
4.4	0.0759997	1
4.6	0.0639996	1
4.8	0.0569997	1
5	0.0510001	1
5.2	0.0449996	1
5.4	0.0379996	1
5.6	0.032	1
5.8	0.032	1
6	0.0250001	1
6.2	0.0189996	1
6.4	0.0189996	1
6.6	0.0189996	1
6.8	0.013	1
7	0.013	1
7.2	0.013	1
7.4	0.00600002	1
7.6	0.00600002	1
7.8	0.00600002	1
8	0.00600002	1
8.2	0.00600002	1
8.4	0.00600002	1
8.6	0.00600002	1
	,	

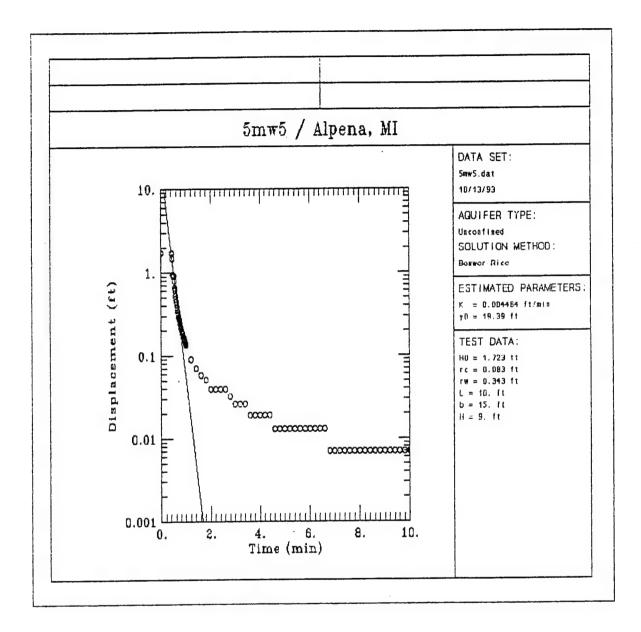


SITE 6 MONITORING WELL #4 (SLUG IN)

		war oum
TIME	DRAWDOWN (++)	WEIGHT
TIME (m,n) 0.4333 0.45 0.4666 0.4833 0.5	1 120	1
0.4333	1.129 0.689	1
0.45	0.249	1
0.4666	0.115001	
0.4833	0.644999	1
0.5	0.644999	
0.5166 0.5333	0.478999	
	0.255	1
0.55	0.581	1
0.5666 0.5833	0.275001	1
0.5833	0.249 0.492 0.255 0.217 0.153001	
0.6	0.492	1
0.6166	0.255	1
0.6333	0.217	1
0.65	0.153001	7
0.6666	0.210999	1
0.6833	0.224	1
0.6166 0.6333 0.65 0.6666 0.6833	0.210999 0.224 0.217 0.210999	1
0.7100	0.210999	1
	0.210999	1
0.75	0.203999	1
0.75 0.7666 0.7833	0.210999 0.203999 0.198001	1
0.7833	0.198001	1
0.8	0.192	1
0.8166	0.192	1
0.8333	0.185	1
0.7833 0.8 0.8166 0.8333 0.85 0.8666	0.179	1
0.8666	0.179 0.172999	1
0.0055	0.27200	1
0.9	0.172999	1
0.9166	0.172999	1
0.9333	0.165999	1
0.95	0.165999	1
0.9666	0.160001	
0.9833	0.160001	1
1	0.160001	1
1.2	0.134	1
1.4	0.120999	1
1.6	0.109	1
1.8	0.102	1
. 2	0.0899991	1
2.2	0.0829992	1
2.4	0.0770006	1
2.6	0.0700006	1
2.8	0.0640001	1
3	0.0579996	1
3.2	0.0509996	1
3.4	0.0509996	1
3.6	0.0449991	1
3.8	0.0390005	1
4	0.0390005	1
4.2	0.0320005	1
4.4	0.0320005	1

SITE 6 MONITORING WELL #4 (SLUG IN)

TIME	DRAWDOWN	WEIGHT
(min)	(f+)	
4.6	0.0320005	1
4.8	0.026	1
5	0.026	1
5.2	0.019	1
5.4	0.019	1
5.6	0.0129995	1
5.8	0.00700087	1
6	0.0129995	1
6.2	0.00700087	1
6.4	0.00700087	1
6.6	0.00700087	1
6.8	0.00700087	1

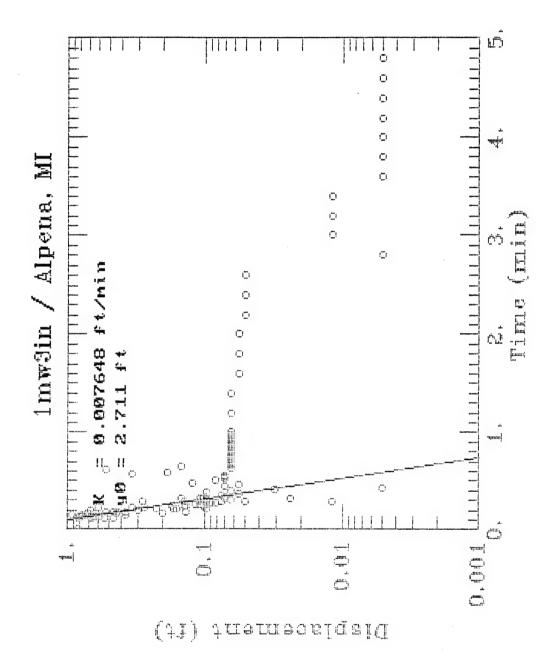


SITE 5 MONITORING WELL #5 (SLUG IN)

TIME	DRAWDOWN	WEIGHT
(wiv)	(4+)	_
	1.723	1
0.45	1.48	1
0.4666	0.944	1
0.5	0.9	1
0.5166	0.919	1
0.5333	0.798	1
0.55	0.657	1
0.5666	0.619	1
0.5833	0.523	1
0.6	0.485	1
	0.447	1
	0.415	1
	0.383	1
	0.358	1
0.6833	0.332	1
0.7	0.307	1
0.7166	0.287	1
0.7333	0.275	1
0.75	0.256	1
0.7666	0.243	1
0.7833	0.23	1
0.8	0.217	1
	0.211	1
	0.198	1
	0.192	1
	0.185	1
0.8833	0.173	1
0.9	0.166	1
0.9166	0.16	1
0.9333	0.16	1
0.95	0.153	1
0.9666	0.147	1
0.9833	0.141	1
1	0.134	1
1.2	0.0900001	1
1.4	0.0699996	1
1.6	0.0579996 0.0509996	1
1.8	0.0390005	1
2	0.0390005	1
2.2 2.4	0.0390005	1
	0.0390005	1
2.6	0.0319995	1
2.8 3	0.026	1
3.2	0.026	1
3.4	0.026	1
3.6	0.019	1
3.8	0.019	1
4	0.019	1
4.2	0.019	1
4.4	0.019	1
4.6	0.0130004	1
	0.020000	_

SITE 5 MONITORING WELL #5 (SLUG IN)

DRAWDOWN	WEIGHT
•	
	1
0.0130004	1
0.0130004	1
0.0130004	1
0.0130004	1
0.0130004	1
0.0130004	1
0.0130004	1
0.0130004	1
0.0130004	1
0.00699992	1
0.00699992	1
0.00699992	1
0.00699992	1
0.00699992	1
0.00699992	1
0.00699992	1
0.00699992	1
0.00699992	1
0.00699992	1
0.00699992	1
0.00699992	1
0.00699992	1
0.00699992	1
0.00699992	1
0.00699992	1
0.00699992	1
	(++) 0.0130004 0.0130004 0.0130004 0.0130004 0.0130004 0.0130004 0.0130004 0.0130004 0.0130004 0.0130004 0.0130004 0.0130004 0.00699992 0.00699992 0.00699992 0.00699992 0.00699992 0.00699992 0.00699992 0.00699992 0.00699992 0.00699992 0.00699992 0.00699992 0.00699992 0.00699992 0.00699992 0.00699992 0.00699992



SITE 1 MONITORING WELL #3 (SLUG IN)

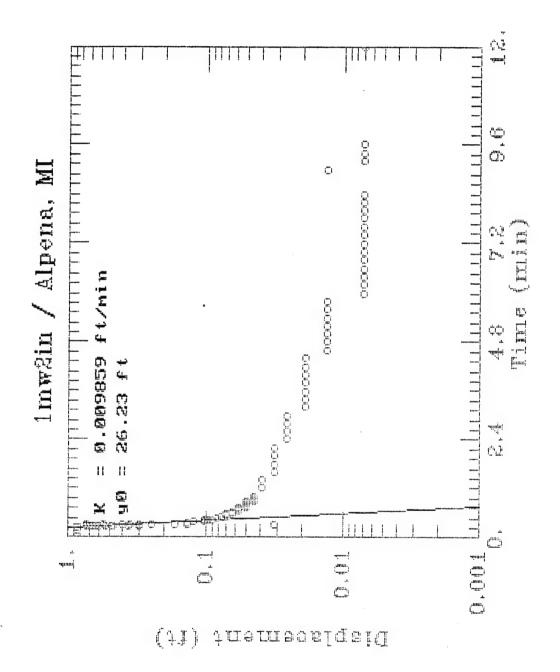
MTVC	DRAWDOWN	WEIGHT
(U''')	(f+)	METONI
0.1133	0.836	1
0.1155	0.65	1
0.1166 0.12	0.453	1
0.12	0.529	1
	0.644	1
	0.784	1
0.13	0.816	1
0.1333	0.631	1
0.1366	0.58	1
0.14	0.721	1
• • • • • •	0.925	1
•	0.759	1
0.15	0.37	1
0.1533	0.708	1
0.1566		1
0.16	0.619 0.434	1
	0.198	1
	0.198	1
••		1
	0.427 0.517	1
		1
	0.453	1
0.1833	0.134 0.376	1
0.1866	0.376	
0.19	0.67 -0.0700003	1
0.1933 0.1966	-0.192	1
0.1966	0.306	1
0.2033	0.223	ī
0.2066	-0.504	ī
0.21	0.166	1
0.21	0.096	1
0.2166	0.159	1
0.22	0.338	1
0 2233	0.599	1
0.2266	0.274	1
0.23	-0.0379998	1
0.2333	-0.0069996	1
0.2366	0.14	1
0.24	0.172	1
0.2433	0.134	1
0.2466	0.102	1
0.25	0.108	1
0.2533	0.115	1
0.2566	0.108	1
0.26	0.102	1
0.2633	0.096	1
0.2666	0.0890001	1
0.27	0.096	1
0.2733	0.096	1
0.2766	0.0829996	_
0.28	0.0829996	1
0.2833	0.14	1

SITE 1 MONITORING WELL #3 (SLUG IN)

TIME	DRAWDOWN (++) 0.281 0.051 0.0759996 0.0129999 0.0640005 0.096 0.0640005	WEIGHT
(min)	(f+)	
0.2866	0.281	1
0.29	0.051	1
0.2933	0.0759996	1
0.2966	0.0129999	1
0.3	0.0640005	1
0.3033	0.096	1
0.3033 0.3066	0.0640005	1
0.31 0.3133	0.096	1
0.3133	0.096 0.102	1
0.3166	0.07	1
0.32	0.096 0.102 0.07 0.147 0.108 0.0249999	1
0.32 0.3233	0.108	1
0.3233 0.3266	0.0249999	1
0.33	0.07	1
0.3333	0.07	1
0.35	0.0759996	1
0.3666 0.3833	0.096 0.0759996 0.0569995 0.096	1
0.4	0.0640005	
0.4166	0.0319999	
0.4333	0.00599989 0.07	1
0.45	0.07	1
0.4000	0.0569995	1
0.4033	0.0640005 0.0319999 0.00599989 0.07 0.0569995 0.121 0.0829996 0.0759996 0.07 0.07 0.338 0.185 -0.115	1
0.5166	0.0029996	1
0.5333	0.07	1
0.55	0.07	1
0.5666	0.338	1
0.5833	0.185	1
0.6	-0.115	
0.6166	-0.115 0.523 0.0640005 0.147	1
0.6333	0.0640005	1
0.65	0.147	1
0.6666 0.6833	0.0640005	1
0.6833	0.0640005	1
0.7	0.0040003	1
0.7166	0.0640005	1
0.7333	0.0640005	1
0.75	0.0640005	1
0.7666	0.0640005	1
0.7833	0.0640005	1
0.8	0.0640005	1
0.8166	0.0640005	1
0.8333 0.85	0.0640005	1
0.8666	0.0640005	1
0.8833	0.0640005 0.0640005	Τ.
0.8833	0.0640005	1
0.9166	0.0640005	1
0.9333	0.0640005	1
0.95	0.0640005	ī

SITE 1 MONITORING WELL #3 (SLUG IN)

TIME	DRAWDOWN	WEIGHT
•	0.0640005	1
		1
	0.0640005	1
1		1
1.2	••••	_
1.4		1
1.6	0.0569995	1
1.8	0.0569995	1
2	0.0569995	1
2.2	0.051	1
2.4	0.051	1
2.6	0.051	1
2.8	0.00599989	
3	0.0129999	1
3.2	0.0129999	1
3.4	0.0129999	1
3.6	0.00599989	1
3.8	0.00599989	1
4	0.00599989	1
4.2	0.00599989	1
4.4	0.00599989	1
4.6	0.00599989	1
4.8	0.00599989	1
6.2	-0.0059996	1
	-0.0069996	1
	-0.0069996	1
	-0.0069996	1
*	-0.0069996	1
•	-0.0069996	1
	-0.0069996	1
7.6	-0.0069996	1
7.8	-0.0069996	1
8	-0.0069996	1
8.2	-0.0069996	1



SITE 1 MONITORING WELL #2 (SLUG IN)

TIME	DRAWDOWN	WEIGHT
(WIU)	(++)	_
0.26	(++) 0.849 0.728	1
0.2033		1
0.2666	0.472	
0.27	0.594	1
0.2733	0.632	1
0.2766	0.728	1
0.28	0.651	1
• •	0.696	1
0.2866		1
0.29	0.536 0.364 0.479	1
0.2933	0.479	1
n Jukk	U - 3	1
0.3	0.555	1
0.3	-0.166	1
0.3033	0.249	1
0.3066 0.31	0.555 -0.166 0.249 0.0319995	1
0.3133	0.031333	1
0.3133	0.134 0.351	1
0.3166	0.3	1
*	0.721	ī
0.3233	0.402	1
	0 100	1
0.33	0.166	1
0.3333	0.166 -0.0889998	
0.35	0.134	1
0.3666	0.134	1
	0.102	1
	0.102	1
	0.102	1
• •	0.0900001	1
	0 0000001	1
0.4666	0.0830001	1
0.4833	0.0830001	1
0.5		1
0.5166 0.5333	0.0699996	1
0.5333	0.0699996	1
0.55	0.0699996	1
0.5666	0.0640001	ī
0.5833	0.0640001	1
0.6	0.0640001	1
0.6166	0.0640001	1
0.6333	0.0579996	ī
0.65	0.0579996	ī
0.6666	0.0579996	1
0.6833	0.0579996	1
0.7	0.0579996	1
0.7166	0.0579996	1
0.7333	0.0509996	1
0.75	0.0509996	1
0.7666	0.0509996	ī
0.7833	0.0509996	1
0.8	0.0509996	1
0.8166	0.0503330	-

SITE 1 MONITORING WELL #2 (SLUG IN)

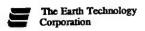
TIME	DRAWDOWN	WEIGHT
(min)	(++)	
0.8333	0.0509996	1
0.85	0.0509996	1
0.8666	0.045	1
0.8833	0.0509996	1
0.9	0 045	1
0.9166	0.045	1
0.9333	0.045 0.045	1
0.95	0.045	1
	0.045	1
	0.045	1
	0.045	1
1.2	0.0390005	1
1.4	0.0390005	1
1.6	0.0319995	1
1.8	0.0319995	1
2	0.0319995	1
2.2	0.0319995	1
2.4	0.026	1
2.6	0.026	1
2.8	0.026	1
3	0.0319995 0.026 0.026 0.026 0.026 0.019	1
3.2	0.019	1
3.4 3.6	0.019	1
3.8	0.019	1
4	0.019	1
4.2	0.019 0.019	1
	0.019	1
4.6	0.0130004	1
	0.0130004	1
	0.0130004	1
	0.0130004	1
	0.0130004	1
	0.0130004	
	0.0130004	1
6	0.00699992	1
6.2	0.00699992	1
6.4	0.00699992	1
6.6	0.00699992	1
6.8	0.00699992	1
7	0.00699992	1
7.2	0.00699992	1
7.4	0.00699992	1
7.6	0.00699992	1
7.8	0.00699992	1
8	0.00699992	1
8.2	0.00699992	1
8.4 9	0.00699992 0.0130004	1
9.2	0.0130004	1
9.4	0.00699992	1
9.6	0.00699992	1
J. 0	0.00033334	-

SITE 1 MONITORING WELL #2 (SLUG IN)

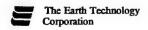
TIME DRAWDOWN WEIGHT
(MIN) (f+)
12 0.00699992 1

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		_

Appendix C: Soil Boring Logs, Monitoring Well Construction Forms and Geotechnical Results



•	nber	:9	31800			Nam	e of Borehole or \	Well: PBG		Sheet _1_	J1
Borehole Loca	ation:	I	Backgro	undn	orth side	·.		Elevation and Date	um (ft): Groun	nd: f Casing:	
Orilling Agen	cy:		Stearns		Г	Oriller:	D. Giffels	Date Started:	8/9/93	Date Completed: 8/	9/93
Orilling Equip		: (CME 75	0				Total: Depth (ft)	12.0	Depth to Bedrock (ft): NA	
Method of Dr	illing]	Hollow S	Stem A	ugers			Number of 4 Samples:	Dist.: NA	Undist.: NA Core	: NA
Borehole Size	(inch	ies): 8	3.25"					Water Depth (ft bgs):	11.0	Water Depth Elev. (ft):	:
Completion Ir abandone	nform d wi	ation: th Ho	This is le Plug.	a backį	ground b	oreho	ole. Borehole	Logged By: J Brie	egel	Checked By: P Lay	
	nple	s	Field A	nalysis	Lo	g					
(feet) (Mumber Type	Blow Count	Drilling Time	PIO (ppm) S/J/B*	FID (ppm) S/J/B*	Graphic Symbol	SOSO		ologic Descriptio		Remarks	
5 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	9 7 6	1432 1435 1440 1445	0/0			SP	SAND; dark brown; surface. Grading to light brow sorted, medium to Same as above, but v Same as above. Grading to light brow Same as above.	vn; without organic d coarse sand. vith iron staining.		Continuous split spoon s Fixed base samples colle POOB10001 0'-1' POOB10203 2'-3' POOB10910 9'-10' Lab analyses for VOCs metals, and SVOCs. PB1A-D Field scree	ected:



5.5

roject Number:	931800		Nan	ne of Borehole or	Well: BG2	Sheet <u>1</u> of
Borehole Location:	Background				Elevation and Datum (ft):	Ground: Top of Casing:
Orilling Agency:	Stearns	I	Driller:	D. Giffels	Date Started: 8/15/93	
Orilling Equipment:	CME 750				Total: 4.0	Depth to Bedrock (ft): NA
Method of Drilling:	Hollow Stem A	igers			Number of 2 Dist.:	
orehole Size (inches	s): 8.25"				Water Depth (ft bgs): 2.5	Water Depth Elev. (ft):
completion Informat cement/bentoni	ion: Grouted to sur te slurry.	face wit	th		Logged By: J Briegel	Checked By: P Lay
Samples	Field Analysis	Lo	g			
	Time PID (ppm) S/J/B* FID (ppm) S/J/B*	Graphic Symbol	SOSN		ologic Description	Remarks
The state of the s	758 0/0		SP	<u></u>	organic rich; with fumes. o medium to coarse, well sorted	Continuous split spoon samples. WET at 2.5'. No hydrocarbon odors noted. TD = 4'.



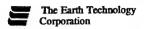
Project Name: MI ANG, Alpena CRTC - Alpena, MI Client: HAZWRAP S1SB4 Sheet 1 of 1 Name of Borehole or Well: 931800 Project Number: _ Ground: Elevation and Datum (ft): Site 1 Borehole Location: Top of Casing: 8/24/93 8/24/93 D. Giffels Date Completed: Date Started: Driller: Drilling Agency: Stearns Total: Depth (ft) Depth to Bedrock (ft): NA 4.0 **CME 750** Drilling Equipment: Number of Samples: Dist.: NA Undist.: NA Core: NA **Hollow Stem Augers** Method of Drilling: Water Depth 2.5 Water Depth Elev. (ft): 8.25" Borehole Size (inches): (ft bgs): Checked By: Logged By: Completion Information: Borehole was abandoned with Hole Plug after sampling was complete. P Lay D Jayne Field Analysis Samples Log Type Blow Count Drilling Time PID (ppm) FID (ppm) S/J/B* S/J/B* Number nscs Remarks Lithologic Description Topsoil for surfical 6 inches. 0809 0/0 19 Collected double water sample SAND; orangeish brown; medium grained sand. volume for duplicate. SP 0813 Grading to brown. Collected double water sample volume for MS/MSD. TD = 4'.



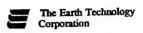
Project Name: MI ANG, Alpena CRTC - Alpena, MI Client: HAZWRAP **Project Number:** 931800 **S1SB5** Name of Borehole or Well: Sheet 1 of 1 Ground: Site 1 Borehole Location: Elevation and Datum (ft): Top of Casing: D. Giffels Stearns 8/24/93 Driller: 8/24/93 Drilling Agency: Date Started: Date Completed: Total: Depth (ft) Depth to Bedrock (ft): NA **CME 750** 4.0 Drilling Equipment: Number of Method of Drilling: **Hollow Stem Augers** Dist.: NA Undist.: NA Core: NA Samples: Water Depth (ft bgs): 8.25" Borehole Size (inches): Water Depth Elev. (ft): Logged By: Checked By: Completion Information: Borehole abandoned with Hole Plug. D Jayne J Briegel Field Analysis Samples Log ow Count PID (ppm) FID (ppm) Number S/1/B* Type nscs Lithologic Description Remarks В 0833 0/0 Uppermost foot is artificial fill. _Artificial fill; grey sand with gravel. SAND; brownish orange; mostly medium grained sand. 40 0836 0/0 Grading to light grey. SP Grading to orangeish brown. TD = 4'. 10



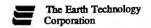
Project Name: MI ANG, Alpena CRTC - Alpena, MI Client: HAZWRAP S1SB6 Sheet $\underline{1}$ of $\underline{1}$ Name of Borehole or Well: 931800 Project Number: Ground: Elevation and Datum (ft): Site 1 Top of Casing: Borehole Location: 8/24/93 D. Giffels 8/24/93 Date Completed: Date Started: Stearns Driller: Drilling Agency: Depth to Bedrock (ft): NA Total: Depth (ft) 4.0 **CME 750** Drilling Equipment: Number of Undist.: NA Core: NA Dist.: NA **Hollow Stem Augers** Method of Drilling: Samples: Water Depth (ft bgs): 3.0 Water Depth Elev. (ft): 8.25" Borehole Size (inches): Checked By: Logged By: Completion Information: Borehole abandoned with Hole Plug. J Briegel D Jayne Field Analysis Log Samples Depth (feet) Count Drilling Time PID (ppm) FID (ppm) S/1/B* Number S/J/B* nscs Lithologic Description Remarks 30 Artificial fill; grey sand with gravel. 0848 AF -SAND; light grey; medium grained sand. 0854 SP Grading to light brown to grey. TD = 4'. 10 15



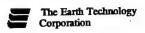
Project Name: <u>N</u>	II ANG, Alpena C	RTC - A	Alpena	a, MI	Client	: HAZWRAP)	
Project Number:	931800		Nan	ne of Borehole or	Well: S1	SB7	Sheet <u>1</u> of _1	
Borehole Location:	Site 1				Elevation and I	Datum (ft): Groun	nd: f Casing:	
Drilling Agency:	Stearns	I	Driller:	D. Giffels	Date Started:	8/24/93	Date Completed: 8/24/93	
Drilling Equipment:	CME 750				Total: Depth (ft)	4.0	Depth to Bedrock (ft): NA	
Method of Drilling:	Hollow Stem A	ugers			Number of Samples:	Dist.: NA	Undist.: NA Core: NA	
Borehole Size (inches)	: 8.25"				Water Depth (ft bgs):	3.0	Water Depth Elev. (ft):	
Completion Informatio	n: Borehole aban	doned w	ith H	ole Plug.	Logged By: Checked By: D Jayne J Briegel			
Samples	Field Analysis	Log	g					
(feet) Number Type Blow Count		Graphic Symbol	SOSO		logic Descript	tion	Remarks	
31 09 			SP	Artificial fill; grey san			Wet at 3'. TD = 4'.	



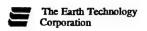
roje	ct N	am	e: .	MI A	NG, A	pena	CF	RTC - A	lpena	, MI		: HAZWRAP			
roje					931800					e of Borehole or	Well: S15	SB8		t _1_ of	
Boreh	ole L	ocat	ion:		Site 1						Elevation and I	Datum (ft): Groun	nd: of Casing:		
Drilli	ng Ag	ency	 /:		Stearns			D	riller:	D. Giffels	Date Started:	8/24/93	Date Completed: 8/24/9		
Drilli					CME 7	50					Total: Depth (ft)	4.0	Depth to Bedrock (ft): NA		
Meth					Hollow	Stem	Au	gers			Number of Samples:	Dist.: NA	Undist.: NA	Core: NA	
Borel					8.25"						Water Depth (ft bgs):	3.0	Water Depth E	lev. (ft):	
						le ab	and	loned w	ith H	ole Plug.	Logged By:	Jayne	Checked By:	riegel	
		am	ple	S	Field .	Analy	ysis	Lo	3						
Depth (feet)	Number	, Type	Blow Count	Drilling Time	PID (ppm) S/J/B*	FID (ppm)	S/1/B*	Graphic Symbol	SOSN		ologic Descrip	tion	Ren	narks	
_		S. A. S.	18	0933				**** ****	AF	Artificial fill; Dark b	rown topsoil.				
-		Manage of the second se	34	0935					SP	SAND; light brown; Grading to reddish b		sand.	Wet at about TD = 4'.	3'.	
5															



Project Name: MI ANG, Alpena CRTC - Alpena, MI Client: HAZWRAP S1SB9 Sheet <u>1</u> of <u>1</u> **Project Number:** 931800 Name of Borehole or Well: Ground: Top of Casing: Elevation and Datum (ft): Site 1 Borehole Location: 8/24/93 8/24/93 Date Completed: D. Giffels Date Started: Stearns Driller: Drilling Agency: Depth to Bedrock (ft): NA Total: Depth (ft) 4.0 **CME 750** Drilling Equipment: Number of Samples: Dist.: NA Undist.: NA Core: NA **Hollow Stem Augers** Method of Drilling: Water Depth 8.25" Water Depth Elev. (ft): Borehole Size (inches): (ft bgs): Checked By: Logged By: Completion Information: Borehole abandoned with Hole Plug. J Briegel D Jayne Samples Field Analysis Log ow Count PID (ppm) FID (ppm) Number S/J/B* nscs Remarks Lithologic Description В 0946 Artificial fill. SAND; light brown; medium grained, well-sorted 0952 54 Grading to light grey with thin clay layers. SP No water level data collected. TD = 4'. 5 -10 15



loje	ct N	um	Dei		318					Nam	e of Borehole or		Groun	nd:	
oreh	ole L	ocat	ion:		Site	1						Elevation and D	10p c	f Casing:	8/24/93
Prillin	ng Ag	genc	y:	5	Stea	rns				riller:	D. Giffels	Date Started:	8/24/93	Date Completed	
Drillin	ng Eq	uipı	nent	. (CMI	E 75	0					Total: Depth (ft)	4.0	Depth to Bedrock (ft): N	
/letho	od of	Dril	ling:]	Holl	ow S	Stem	Au	gers			Number of Samples:	Dist.: NA	Undist.: NA	Core: NA
Boreh	ole S	ize (inch	es): 8	3.25	11						Water Depth (ft bgs):	3.0	Water Depth Ele	ev. (ft):
Comp	oletio	n Ini	orm	ation:	Bor	ehol	le ab	and	oned w	ith H	ole Plug.	Logged By: Checked By:			riegel
	S	Sam	ple	s	Fie	ld A	naly	/sis	Lo	g		<u> </u>			
(feet)	Number Type Blow Count Drilling Time PID (ppm) S/J/B* FID (ppm) S/J/B*									SOSN	Liti	nologic Descrip	tion	Rem	
5		IIIMIII	36			0			~~~	SP	Artificial fill; topso	own; medium graine	d sand.	Wet at about 3 TD = 4'.	

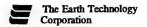


:15

Project Name	e: <u>MI</u>	ANG, A	lpena C	RTC -	Alpena	a, MI	Client	HAZWRAF				
Project Num	ber:	931800			Nan	ne of Borehole or	Well: S1S	B11	Sheet _1_ of _1_			
Borehole Locati	ion:	Site 1					Elevation and D	atum (ft): Groun	und: of Casing:			
Drilling Agency	/ :	Stearns		1	Driller:	D. Giffels	Date Started:	8/24/93	Date Completed: 8/24/93			
Drilling Equipm	nent:	CME 75	50				Total: Depth (ft)	Total: Depth (ft) 4.0 Depth to Bedrock (ft): NA				
Method of Drill	ing:	Hollow	Stem Au	igers			Number of Samples:	Dist.: NA	Undist.: NA Core: NA			
Borehole Size (i	inches):	8.25"					Water Depth (ft bgs):	3.0	Water Depth Elev. (ft):			
Completion Info	ormation:	Boreho	le aband	doned w	vith H	ole Plug.	Logged By:	ayne	Checked By: J Briegel			
Sam		Field A	nalysis	Lo	g							
Depth (feet) Number Type	Drilling Time	PID (ppm) S/J/B*	FID (ppm) S/J/B*	Graphic Symbol	SOSO	Litho	ologic Descript	Remarks				
anna anna anna anna anna anna anna ann	62 1034 63 1038				SP	Asphalt; 6 inches thic Artificial fill beneath SAND; brown; media Grading to greyish. Grading back to brow	asphalt. um grained sand.		No field screen. Wet at about 3'. TD = 4'.			
10 —												



roje	ct N	um	bei	:	9318	500				Nan	ne of Borehole or	Well:	B12	Snee	t <u>1</u> of _1
Boreh	ole L	oca	ion:		Site	1						Elevation and I	Datum (ft): Groun	nd: of Casing:	
Drillir	ıg Ag	genc	y:		Stea	rns			r	Priller:	D. Giffels	Date Started:	8/24/93	Date Complete	d: 8/24/93
Drillir	ıg Eq	uipı	nent	:	CM	E 75	50					Total: Depth (ft)	4.0	Depth to Bedrock (ft): 1	۸A
Metho	d of	Dril	ling	:	Holl	low	Sten	Au	igers			Number of Samples:	Dist.: NA	Undist.: NA	Core: NA
Boreh	ole S	ize	(incl	es):	8.25	;"						Water Depth (ft bgs):	1.5	Water Depth E	lev. (ft):
Comp	letion	n Inf	orm	ation:	Bo	reho	le al	and	loned w	ith H	ole Plug.	Logged By:	ayne	Checked By:	riegel
	S	an	ple	s	Fie	eld A	nal	ysis	Lo	g					
Uepth (feet)	Number	Type	Blow Count	Drilling Time	PID (ppm)		FID (ppm)		Graphic Symbol	SOSN	Litho	logic Descript	ion	Ren	arks
-		ا المالية المالية	13	1055					****	AF	Artificial fill; topsoil			Bohehole situated	i in ditch.
-		Marian Personal								SP	-SAND; greyish brow - - - - - -	n; meaium graine	a sana.	Wet at about Used only one S hole because was TD = 4'.	S sampler on this
5 —									,		-				
10 -											- - - - - -				
15 —											-				



Project Name: MI ANG, Alpena CRTC - Alpena, MI Client: HAZWRAP 931800 S1PZ1 Project Number: Name of Borehole or Well: Sheet <u>1</u> of <u>1</u> Ground: Site 1 Borehole Location: Elevation and Datum (ft): Top of Casing: D. Giffels Stearns 8/23/93 Driller: Drilling Agency: Date Started: Date Completed: 8/23/93 Depth to Bedrock (ft): NA **CME 750** Total: 8.0 Drilling Equipment: Depth (ft) Number of **Hollow Stem Augers** Method of Drilling: Dist.: NA Undist.: NA Core: NA Samples: Water Depth (ft bgs): 8.25" Borehole Size (inches): 4.0 Water Depth Elev. (ft): Logged By: Checked By: Completion Information: Completed as a piezometer. Abandoned 9/12/93 with Hole Plug. See piezometer contruction log. D Javne J Briegel Samples Field Analysis Type Blow Count Drilling Time (mdd) PID (ppm) S/J/B* S/J/B* Number SOSO Lithologic Description Remarks FID SAND; light brown; medium grained; moist. 80/0 Not sampled with split spoon. Auger cuttings noted to have hydrocarbon odor. PID reads 80ppm. SP Same as above. Screened from 3' to 8'. Applied filter pack from 2' to 8'. TD = 8'. 10 -15



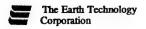
										3.67	CII A-	TAZUDAD		
rojec	t N	am	e:		ANG, A	lpena	CF	RTC - A				HAZWRAP		_1_ of
rojec	t N	un	ber	:	931800				Nam	e of Borehole or \	Ven	Groun		01
Boreho	le L	oca	tion:		Site 1						Elevation and Da	tum (ft): Top o	f Casing:	0/00/100
Orillin	g Ag	enc	y:		Stearns			E	riller:	D. Giffels	Date Started:	8/23/93	Date Completed:	8/23/93
Orillin	g Eq	uip	ment	:	CME 7	50					Total: Depth (ft)	8.0	Depth to Bedrock (ft): No	<u>A</u>
Metho	d of	Dri	lling	:	Hollow	Stem	Au	gers			Number of Samples:	Dist.: NA	Undist.: NA	Core: NA
Boreh	ole S	ize	(incl	nes):	8.25"						Water Depth (ft bgs):		Water Depth Ele	ev. (ft):
Comp 9/12	letion	n In Wi	form	ation: Hole	Compl Plug. S	eted ee pie	as a	piezon neter co	eter. ntruc	Abandoned tion log.	Logged By: D Ja	ıyne	Checked By: J Br	iegel
	S	San	iple	es	Field	Analy	ysis	Lo	g					
Uepth (feet)	Number	Type	Blow Count	Drilling Time	PID (ppm) S/J/B*	FID (ppm)	S/1/B*	Graphic Symbol	SOSN	Litho	logic Descripti	on	Rema	arks
	_				60/0					SAND; light brown;	medium grained.		Not sampled with	split spoons.
5 —									SP				Hydrocarbon odo cuttings. PID rea	rs noted on dis 60 ppm.



Project Name: MI ANG, Alpena CRTC - Alpena, MI Client: HAZWRAP Project Number: 931800 S1PZ3 Name of Borehole or Well: Sheet _1_ of _1 Ground: Borehole Location: Site 1 Elevation and Datum (ft): Top of Casing: Stearns D. Giffels Drilling Agency: 8/23/93 Driller: Date Started: Date Completed: 8/23/93 Total: Depth (ft) Depth to Bedrock (ft): NA **CME 750** Drilling Equipment: 8.0 Number of **Hollow Stem Augers** Method of Drilling: Dist.: NA Undist.: NA Core: NA Samples: Water Depth (ft bgs): 8.25" Borehole Size (inches): Water Depth Elev. (ft): Completion Information: Completed as a piezometer. Abandoned 12 Sep 93 with Hole Plug. See piezometer contruction log. Logged By: Checked By: D Jayne J Briegel Samples Field Analysis Log Blow Count Drilling Time PID (ppm) FID (ppm) Number S/1/B* S/J/B* nscs Lithologic Description Remarks Asphalt pavement at surface; 6" thick. No split spoon samples taken. -SAND; light brown; medium grained. No hydrocarbon odors noted from cuttings. No readings on PID. SP Field screen sample collected 8/24/93 with bailer: P1PZ3. TD = 8'. 15



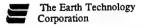
roje	ct N	am	e:	MI A	NG, A	pena Cl	RTC - A	Alpena	, MI	Client:	HAZWRAP			
roje	ct N	um	ber	:	931800			Nam	e of Borehole or	Well: S1M	TW1		Sheet <u>1</u> of <u>2</u>	
oreh	ole L	оса	tion:		Site 1					Elevation and D	atum (ft): Groun	nd: of Casing:		
rillir	ıg Aş	genc	y:		Stearns		I	Oriller:	D. Giffels	Date Started:	8/24/93	Date Completed: 8/24/9		
rillir	ng Eq	quip	ment	: (CME 75	0				Total: Depth (ft)	40	Depth to Bedrock (ft): NA		
Metho	d of	Dri	lling	:]	Hollow	Stem Au	igers			Number of Samples: NA	Dist.: NA	Undist.	: NA Core: NA	
Boreh	ole S	ize	(inch	es):	8.25"					Water Depth: (ft bgs)	2.5	Water	Depth Elev.(ft):	
conp	ito	ring	g w	ell, wi	This bo	orehole v sing. S	was com ee moni	pletec	l as a g well	Logged By:	ayne	Checke	d By: J Briegel	
	S	San	ple	s	Field A	nalysis	I	лоg				i e		
(feet)	Number	Type	Blaw Count	Drilling Time	PID (ppm) S/B*	FID (ppm) S/B*	Graphic Symbol	SOSO		ologic Descripti		Well Construction Diagram	Remarks	
		STATE OF THE PARTY	7	1353 1357	.5/0				Change to grevish b	erial surficial 4". rown and reddish banic debris; to well-	rown; to graded SAND.		Water at about 2.5 feet	
5 -								SP	-				BGL.	
		NA PARAMETER STATE OF THE PARAMETER STATE OF	-8	1420 1422	.5/0				Same as above. SANDY CLAY; gr	ey; 85% hard, plast	ic clay; with		Hydropunch sample tak from 6'-8' level.	
0 =		Cook HAILAN COMMENT	10	1425	.7/0			CL SP	sand. SAND; reddish bro	wn; fine to medium	sand.			
		THE WAY WAY WAY THE	4	1429	.1/0				-CLAY; grey; hard, medium san	đ.	ace of fine to			
5 —		H. Lander again	4	1433	0/0			CL	Grading to with less	s sand.			0 0	
-		No. of London	14	1435	0/0			sc	SANDY CLAY; gr	ey; 80% plastic clay	y; 20% sand.		Hydropunch sample tak from 16'-18' level.	
0 -		March New York Control of the State of the S	9	1459	0/0				SAND; grey; with		l.			
-		Service advanta	31	1503	0/0			SP	Same as above, with		S.			
- - - -	1	Bell Haller advante ability	29	1511	0/0					·				
-		The street of		1515	0/0				Grading to mostly Grading to coarser	medium sand.	ener			
-		HARMA	51	1518	0/0				Grading to coarser	as hole becomes de	eper.		-	



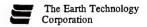
Project Name: MI ANG, Alpena CRTC - Alpena, MI Client: HAZWRAP

Project Number: 931800 Name of Borehole or Well: S1MW1 Sheet 2 of 2

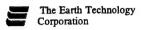
					: <u>93</u>					ne of Borehole or Well: SIMWI		Sheet <u>2</u> of <u>2</u>	
	_ 5			ple	S	Field A	nalysis	1	og		<u>.e</u>		
(feet)	Number	Tube	+41.00 -10 8	חוסה הסונו	Drilling Time	PID (ppm) S/B*	FID (ppm) S/B*	Graphic Symbol	SOSN	Lithologic Description	Well Construction Diagram	Remarks	
55 50 50			The state of the s	08 56 20	1523 1550 1606 1612 1620				SC	Grading to fine to medium sand; to reddish brown from greyish; with some fine gravel. SAND; greyish brown with some reddish layers; fine to coarse sand; with fine gravel; stiff. Grading with more gravel and gravelly layers. CLAYEY SAND/SANDY CLAY; grey.		Hydropunch sample taken from 30'-32' level. Wanted to sample with Shelby tube at 38', but no clay layer. Hydropunch sample taken from 38'-40' level. TD = 40.2'; limestone bedrock at bottom of borehole.	



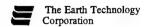
Project Name: MI ANG, Alpena CRTC - Alpena, MI Client: HAZWRAP S1MW2 Sheet <u>1</u> of <u>1</u> Name of Borehole or Well: 931800 Project Number: Ground: Elevation and Datum (ft): Site 1 Top of Casing: Borehole Location: 8/27/93 8/26/93 Date Completed: D. Giffels Driller: Date Started: Stearns Drilling Agency: Depth to Bedrock (ft): NA Total: Depth (ft) 13 **CME 750** Drilling Equipment: Number of Core: NA Dist.: NA Undist.: NA **Hollow Stem Augers** Samples: NA Method of Drilling: Water Depth: (ft bgs) 7.0 Water Depth Elev.(ft): 8.25" Borehole Size (inches): Checked By: Logged By: Completion Information: This borehole was completed as a monitoring well, with 2" casing. See monitoring well J Briegel M Stoker contruction log. Well Construction Diagram Log Field Analysis Samples Depth (feet) Drilling Time D (ppm) S/B* FID (ppm) S/B* Count Graphic Symbol Number SOSO Remarks Lithologic Description 30 PID B Topsoil; dark brown; Sand with grass roots for 1 1615 0/0 22 surficial 6". SAND; greyish; mostly fine to medium grained. Same as above. SP 1634 Hydropunch sample taken from 6'-8'. Same as above. 0/0 1637 -SILTY CLAY; grey; plastic. TD = 13'. 15 20 25



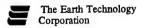
Project Name: MI ANG, Alpena CRTC - Alpena, MI Client: HAZWRAP 931800 S1MW3 Project Number: Sheet 1 of 1 Name of Borehole or Well: Ground: Site 1 Borehole Location: Elevation and Datum (ft): Top of Casing: Stearns D. Giffels 8/26/93 Drilling Agency: Driller: Date Started: 8/27/93 Date Completed: Total: Depth (ft) Depth to Bedrock (ft): NA **CME 750** Drilling Equipment: 13 Number of Samples: NA **Hollow Stem Augers** Method of Drilling: Dist.: NA Core: NA Undist.: NA Water Depth: 8.25" 6.0 Borehole Size (inches): Water Depth Elev.(ft): (ft bgs) Completion Information: This borehole was completed as a monitoring well, with 2" casing. See monitoring well Logged By: Checked By: M Stoker J Briegel contruction log. Construction Diagram Log Samples Field Analysis ow Count Drilling Time FID (ppm) S/B* D (ppm) S/B* Number Type nscs Lithologic Description Remarks PID B 1653 0/0 GRAVEL; Artificial fill at surface for 1 foot. 15 SAND. SAND. SP Hydropunch sample at 7'. SAND. 1740 0/0 CLAY/SILTY CLAY; grey; plastic. TD = 13. 15 20 25



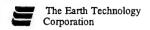
roje					ANG, AI 931800				ne of Borehole or	Well:S1M	.W4	8	Sheet 1 of _		
	ole L	_			Site 1			. 10011		Elevation and Da	atum (ft): Grour				
_	ng Ag				Stearns			Driller:	D. Giffels	Date Started:	8/27/93	Date Completed: 8/27/9			
	ng Eq			:	CME 75	30	l			Total: Depth (ft)	13	Depth to Bedrock (ft): NA		
	od of				Hollow	Stem Au	igers			Number of Samples: NA	Dist.: NA	Undist.:			
	ole S				8.25"					Water Depth: (ft bgs)	3.0	Water De	pth Elev.(ft):		
Comp well	letior I, wi	n Ini ith	form 2" (ation:	Boreho . See m	le was c ionitorii	omplet ig well	ed as a	a monitoring action log.	Logged By:	ayne		Checked By: J Briegel		
	S	Sam	ıple	s	Field A	nalysis]	юg				<u>e</u> e			
(feet)	Number	Type	Blow Count	Orilling Time	PID (ppm) S/B*	FID (ppm) S/B*	Graphic Symbol	SOSO	Lith	ologic Descriptio	on	Well Construction Diagram	Remarks		
5				0917	0/0			SP	Same as above. SILTY CLAY CLAY			Sar scr Hy at	Water at about 3 fee nple P1MW4AW (Feen). dropunch sample tal?'.		



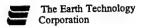
Project Name: MI ANG, Alpena CRTC - Alpena, MI Client: HAZWRAP 931800 S1MW5 **Project Number:** Name of Borehole or Well: Sheet <u>1</u> of <u>1</u> Ground: Site 1 Borehole Location: Elevation and Datum (ft): Top of Casing: Stearns Driller: D. Giffels 8/28/93 8/28/93 Drilling Agency: Date Started: Date Completed: Total: Depth (ft) Depth to Bedrock (ft): NA **CME 750** 3 Drilling Equipment: Number of Method of Drilling: **Hollow Stem Augers** Dist.: NA Undist.: NA Core: NA Samples: NA Water Depth: (ft bgs) 8.25" Borehole Size (inches): 2.5 Water Depth Elev.(ft): Logged By: Checked By: Completion Information: This borehole was abandoned. No Monitoring Well was installed. J Briegel J Briegel Well Construction Diagram Samples Field Analysis Log Depth (feet) ow Count PID (ppm) S/B* FID (ppm) S/B* Number Type SOSO Lithologic Description Remarks Augered from surface to SAND; dark brown; medium to coarse grained quartzose sand; well sorted. 7 0829 0/0 SP Wet at 2.5'. TD = 3'. Did not drill/drive past 3'. Hydropunch sample taken between 3'-7'. 10 20 25



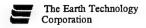
Project Name: MI ANG, Alpena CRTC - Alpena, MI Client: HAZWRAP S1MW6 Sheet $\underline{1}$ of $\underline{1}$ Name of Borehole or Well: 931800 Project Number: Ground: Elevation and Datum (ft): Borehole Location: Site 1 Top of Casing: 8/28/93 8/28/93 D. Giffels Date Completed: Date Started: Stearns Driller: Drilling Agency: Depth to Bedrock (ft): NA Total: Depth (ft) 13 **CME 750** Drilling Equipment: Number of Core: NA Dist.: NA Undist.: NA **Hollow Stem Augers** Method of Drilling: Samples: NA Water Depth: 2.0 Water Depth Elev.(ft): 8.25" Borehole Size (inches): (ft bgs) Logged By: Checked By: Completion Information: Borehole was completed as a monitoring well, with 2" casing. See monitoring well contruction log. P Lay J Briegel Well Construction Diagram Log Field Analysis Samples PID (ppm) S/B* FID (ppm) S/B* Blow Count Drilling Number Type nscs Lithologic Description Remarks SAND; dark brown to brown; medium to coarse grained sand. 17 1043 0/0 Same as above, but wet. SP Hydropunch sample taken between 3'-7' level. 1100 -CLAY; grey; plastic; with sand; with slight hydrocarbon odor. 1645 CLAugered to 13'. TD = 13. 15 20 25



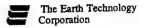
Project Name: M	I ANG Alnena C	PTC -	Man			4.73UZ) 4.D			-
Project Number:	931800			ne of Borehole or V	Client: H. Well: S1MW7			Sheet	1 of 1
Borehole Location:	Site 1				Elevation and Datum	(ft): Groun	d: f Casing		
Drilling Agency:	Stearns	I	Oriller:	D. Giffels	Date Started: 8/	28/93		Completed:	8/28/93
Drilling Equipment:	CME 750				Total: 3 Depth (ft)		Depth Bedro	to ck (ft): NA	
Method of Drilling:	Hollow Stem A	ugers			NI	Dist.: NA		t.: NA	Core: NA
Borehole Size (inches):	8.25"				Water Depth: 1.	5	Water	Depth Elev	v.(ft):
Completion Information and cuttings.	Borehole was a	abandon	ed wi	th Hole Plug	Logged By: J Briege	ı	Check	ed By:	ay
Samples	Field Analysis	L	og				<u></u> 6		
Depth (feet) Number Type Blow Count Drilling	PID (ppm) S/B* FID (ppm) S/B*	Graphic Symbol	SOSN	Litholo	ogic Description		Well Construction Diagram	Rema	rks
15 1112	0/0		SP	SAND; brown; coarse	grained sand.			Wet at TD = 3'. augering/di spoon past Hydropunc at 3'-7' lev	No riving split 3'.



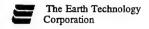
Project Name: MI ANG, Alpena CRTC - Alpena, MI Client: HAZWRAP S1MW8 Sheet 1 of 1 Name of Borehole or Well: _ 931800 Project Number: Ground: Elevation and Datum (ft): Site 1 Top of Casing: Borehole Location: 8/29/93 8/28/93 Date Completed: D. Giffels Date Started: Driller: Stearns Drilling Agency: Depth to Bedrock (ft): NA Total: Depth (ft) 13 **CME 750** Drilling Equipment: Number of Undist.: NA Core: NA Dist.: NA **Hollow Stem Augers** Samples: NA Method of Drilling: Water Depth: Water Depth Elev.(ft): 2.0 8.25" Borehole Size (inches): (ft bgs) Checked By: Logged By: Completion Information: Borehole abandoned after caving in, filled with Hole Plug to surface. J Briegel D Jayne Well Construction Diagram Log Field Analysis Samples Type Iow Count Drilling Time (mdd) (mdd) Number S/B* S/B* Remarks Lithologic Description PID SAND; brown. 1318 Very moist to wet. Wet at 2'. No hydrocarbon odors this shallow. Hydropunch sample from 3'-7'. 8/28/93 CLAYEY SAND/SANDY CLAY; grey; with fine to 1632 8/29/93 medium grained sand; moderately stiff to Fine to medium grained stiff; moist; slight odor. sand stringer from 8.2' to CH/ 1634 Strong hydrocarbon odor. SC CLAY; grey; with 15% sand; stiff; slight odor; moist 1637 to slightly moist. CH TD = 13. 20 25



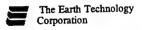
Project Name: MI ANG, Alpena CRTC - Alpena, MI Client: HAZWRAP 931800 S1MW9 Project Number: Name of Borehole or Well: Sheet 1 of 1 Ground: Top of Casing: Site 1 Borehole Location: Elevation and Datum (ft): Stearns Drilling Agency: D. Giffels 8/28/93 Driller: 8/28/93 Date Started: Date Completed: Depth to Bedrock (ft): NA Total: **CME 750** Drilling Equipment: 13 Depth (ft) Number of Samples: NA 2 **Hollow Stem Augers** Method of Drilling: Dist.: NA Undist.: NA Core: NA Water Depth: 8.25" Borehole Size (inches): 2.0 Water Depth Elev.(ft): (ft bgs) Logged By: Checked By: Completion Information: Completed as a monitoring well. Well was abandoned soon after sampling. See monitoring well J Briegel J Briegel contruction log. Well Construction Diagram Samples Field Analysis Log Depth (feet) Blow Count Drilling Time O (ppm) S/B* O (ppm) S/B* Number Type SOSO Lithologic Description Remarks FID PID 7 SAND; fine to medium grained; loose. 1350 Wet at 2'. SP 1407 Hydropunch sample collected from 3'-7 interval. Water has odor. CLAY; grey; with minor sand. 1612 10 TD = 13. 15 20 25



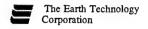
Project Name: MI ANG, Alpena CRTC - Alpena, MI Client: HAZWRAP S1MW10 Sheet 1 of 1Name of Borehole or Well: 931800 Project Number: Elevation and Datum (ft): Top of Casing: Site 1 Borehole Location: 8/29/93 8/29/93 D. Giffels Date Completed: Date Started: Stearns Driller: Drilling Agency: Depth to Bedrock (ft): NA Total: 17 **CME 750** Drilling Equipment: Depth (ft) Number of Core: NA Undist.: NA Dist.: NA **Hollow Stem Augers** Samples: NA Method of Drilling: Water Depth: Water Depth Elev.(ft): 1.5 8.25" Borehole Size (inches): (ft bgs) Checked By: Logged By: Completion Information: Borehole completed as monitoring well. Casing pulled and hole grouted on 9/12/93 to surface. See J Briegel J Briegel/D Jayne monitoring well contruction log. Well Construction Diagram Log Field Analysis Samples Count D (ppm) S/B* (ppm) SSS Number PID C Remarks Lithologic Description 30 딢 Land Located in woods 90' west Tof S1MW6. SAND. Wet at about 1.5'. SP 1342 Drove hydropunch sampler from surface to CLAYEY SAND/SANDY CLAY; grey to greyish 0/0 4'; collected water. 1402 5 brown; no hydrocarbon odor. SC SC/ CLAY; with sand and silt; with minor sand seams. 1418 0/0 CL SAND; greyish brown; coarse grained quartz sand; Has strong hydrocarbon 1425 SP with hydrocarbon odor; wet. odor at about 9'. CL SANDY CLAY; greyish brown. 10 0/0 1435 CLAY; highly plastic. 1445 1510 15 SAND. SP TD = 17. 1527 Drove hydropunch sampler from 17'-21'; collected water sample. 20 Water is clear to slightly nurbid; no hydrocarbon odor. 25



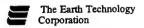
Project Name: MI ANG, Alpena CRTC - Alpena, MI Client: HAZWRAP 931800 **S1MW11 Project Number:** Name of Borehole or Well: Sheet 1 of 1 Ground: Site 1 Borehole Location: Elevation and Datum (ft): Top of Casing: Stearns D. Giffels Drilling Agency: Driller: Date Started: 8/29/93 Date Completed: 8/29/93 Depth to Bedrock (ft): NA Total: **CME 750** Drilling Equipment: 15 Depth (ft) Number of Method of Drilling: **Hollow Stem Augers** Dist.: NA Undist.: NA Core: NA Samples: NA Water Depth: Borehole Size (inches): 8.25" 2.0 Water Depth Elev.(ft): (ft bgs) Logged By: Checked By: Completion Information: Borehole completed as a monitoring well, with 2" casing. See monitoring well contruction log. P Lay D Jayne Well Construction Diagram Log Field Analysis Samples Depth (feet) Blow Count Drilling Time O (ppm) S/B* (mdd) Number S/B* **SSS** Lithologic Description PIO Remarks 딤 CLAY; organic clay of medium to high plasticity. 1705 SAND; light brown; fine to medium grained sand; very moist to wet. Wet at about 2'. SP Augered from 3'-7' without recording lithology. "CLAYEY SAND; grey; with 2"-3" sand stringer; 1710 SC Grading to CLAYEY SAND/SANDY CLAY; 1712 CLAY; grey; with trace of sand; slightly moist to 1715 moist. СН Hydropunch sample taken from 12'-16'. 1720 Grading with silt and trace of fine sand. 15 TD = 15. 20 25



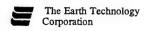
Project Name: MI ANG, Alpena CRTC - Alpena, MI Client: HAZWRAP S1MW12 Sheet 1 of 1 Name of Borehole or Well: 931800 **Project Number:** Ground: Elevation and Datum (ft): Top of Casing: Site 1 Borehole Location: 9/8/93 9/8/93 Date Completed: D. Giffels Date Started: Driller: Stearns Drilling Agency: Depth to Bedrock (ft): NA Total: Depth (ft) 15 **CME 750** Drilling Equipment: Number of Undist.: NA Core: NA Dist.: NA **Hollow Stem Augers** Samples: NA Method of Drilling: Water Depth: Water Depth Elev.(ft): 5.0 8.25" Borehole Size (inches): (ft bgs) Checked By: Logged By: Completion Information: Completed as a monitoring well, with 2" casing. See monitoring well contruction log. J Briegel P Lay/D Jayne Well Construction Diagram Log Samples Field Analysis FID (ppm) S/B* Blow Count Drilling Time PID (ppm) S/B* Number nscs Remarks Lithologic Description 1050 SP Collected duplicate SAND; dark grey; medium grained; wet. 1100 4 sample. 1105 CLAY; dark grey; plastic. Very thin sand seams in 1110 clay. 10 CH Same as above. 1112 Grading with trace of sand. 1120 TD = 15. 20



Project Name: MI ANG, Alpena CRTC - Alpena, MI Client: HAZWRAP **Project Number:** 931800 **S1MW13** Name of Borehole or Well: Sheet 1 of 1 Ground: Borehole Location: Site 1 Elevation and Datum (ft): Top of Casing: Stearns D. Giffels 9/8/93 Drilling Agency: Driller: Date Started: Date Completed: 9/10/93 Total: Depth to Bedrock (ft): NA **CME 750** 15 Drilling Equipment: Depth (ft) Number of Samples: NA **Hollow Stem Augers** Method of Drilling: Dist.: NA Undist.: NA Core: NA Water Depth: 8.25" Borehole Size (inches): 5.0 Water Depth Elev.(ft): (ft bgs) Completion Information: Completed as a monitoring well, with 2" casing. See monitoring well contruction log. Logged By: Checked By: D Jayne J Briegel Well Construction Diagram Samples Field Analysis Log Type Blow Count Depth (feet) FID (ppm) S/B* Orilling Time (mdd) Number S/B* Lithologic Description Remarks PID SAND; reddish brown; medium grained. 1515 Drove hydropunch from surface to 6'; collected water sample. SP Wet at about 5'. Same as above. 1543 SANDY CLAY; dark grey; with medium grained 1546 CL sand. 10 1550 CLAY; dark grey; medium stiff; highly plastic. СН 1553 SANDY CLAY; with medium sand. TD = 15. 20 25



Project Name: MI ANG, Alpena CRTC - Alpena, MI Client: HAZWRAP **S1MW14** Sheet <u>1</u> of <u>1</u> Name of Borehole or Well: 931800 Project Number: Ground: Elevation and Datum (ft): Site 1 Borehole Location: Top of Casing: 9/11/93 Date Completed: 9/12/93 D. Giffels Driller: Date Started: Stearns Drilling Agency: Depth to Bedrock (ft): NA Total: 30 **CME 750** Drilling Equipment: Depth (ft) Number of Dist.: NA Undist.: NA Core: NA **Hollow Stem Augers** Method of Drilling: Samples: NA Water Depth: Water Depth Elev.(ft): 8.25" Borehole Size (inches): (ft bgs) Checked By: Logged By: Completion Information: Installed a 30' deep monitoring well, with 2" casing. See monitoring well contruction log. J Briegel D Javne Construction Diagram Field Analysis Log Samples Depth (feet) ow Count Drilling Time D (ppm) S/B* D (ppm) S/B* Well Number SSS Type Remarks Lithologic Description PIO E Tisee log of S1MW6 for detailed description of shallow lithology. SAND; light brown; medium grained. SP CH That Augered from surface to 11,114.5' with 14.25" augers, SAND, poorly graded. then continued with 8.25" augers to TD at SP Drove hydropunch from 20 20'-26'; collected water sample. May have hit sand at 23 SAND? feet, according to driller's remarks. SP? 0825 TD = 30.



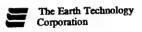
roje	ect N	lun	ıbe	r:	931800			Nar	ne of Borehole or	Well: S1MW	/15		Sheet 1 of
Boreh	ole I	_oca	tion	:	Site 1	_				Elevation and Date	um (ft): Groun	nd: of Casing	•
Drilli	ng A	geno	y:		Stearns		1	Driller:	D. Giffels	Date Started:	9/11/93		Completed: 9/11/93
Drillii	ng E	luip	men	t:	CME 75	50	<u></u>			Total: Depth (ft)	7 .	Depth	to ck (ft): NA
Metho	od of	Dri	lling	;:	Hollow	Stem A	ugers			Number of Samples: NA	Dist.: NA		t.: NA Core: NA
Boreh	ole S	ize	(incl	hes):	8.25"					Water Depth: (ft bgs)		Water	Depth Elev.(ft):
Comp casi	letio	n In Se	form e n	nation: 10nito	Comploring wel	eted as a	monite	oring og.	well, with 2"	Logged By: J Brie	egel	Check	ded By: J Briegel
	5		ple	es	Field A	nalysis	I	og.				6	
Uepth (feet)	Number	Type	3	Drilling Time	PID (ppm) S/B*	FID (ppm) S/B*	Graphic Symbol	SOSN	Litho	logic Description		Mell Construction Diagram	Remarks
								SP?	Soil not described 0'	-5'.			Augered from surface to feet deep without recording lithology.
5 -		Blevery of the little of the l	4	1413	0/0			SP		um to coarse grained, quartzose sand; wet.			
10									- - - -			ļ	TD = 7'. Drove hydropunch down from 7'-10' and collected wate
,									- - -				
5 —									- - - - -				
1111									- - - -				
0 -						:			- - - - -				-
5									- - - -				
							T.		_ _ _				
4									E				



roje	ct N	um	ber	:!	931800				Nan	e of Borehole or	Well: MP2S		Sheet _1_ of _
Boreh	ole L	ocat	ion:		Site 2 (N	1 otor	Po	ol)			Elevation and D	atum (ft): Groun	of Casing:
Drilli	ng Ag	enc	y:	:	Stearns			D	riller:	D. Giffels	Date Started:	8/14/93	Date Completed: 8/14/93
Drilli	ng Eq	uipr	nent	: (CME 75	50					Total: Depth (ft)	8.0	Depth to Bedrock (ft): NA
Metho	od of	Dril	ling:	.]	Hollow	Stem	Au	igers			Number of Samples:	Dist.: NA	Undist.: NA Core: NA
Borel	ole S	ize (inch	es):	8.25"						Water Depth (ft bgs):		Water Depth Elev. (ft):
Comp Gr O	oletion	n Inf	orm	ation: rface	First of with be	f two ntoni	boi te.	reholes	name	d MP2SB2.	Logged By:	riegel	Checked By: P Lay
	Samples Field Analysis Log										1		
Depth (feet)	Number Type Blow Count Drilling Time PID (ppm) S/J/B* FID (ppm) S/J/B* Graphic Symbol USCS							Graphic Symbol	SOSN	Lith	ologic Descript	ion	Remarks
5 —		IIIWIIWIIWIII	33 25 26	0736 0743 0748 0755	.5/0				SP	Asphalt topping 6" ti Artificial fill: brown SAND; mottled brov to coarse sand; wi moist. Grading to with coa quartzose sand; bi	; sand with gravel. wn and orange browth trace of fines; lo	ose; slightly	Asphalt at the surface, underlaiby sand/gravel subbase. Hydrocarbon odors not detected Duplicate soil sample collected TD = 8'.



Project Name: MI ANG, Alpena CRTC - Alpena, MI Client: HAZWRAP MP2SB2-B 931800 Project Number: Name of Borehole or Well: Sheet _1_ of _1 Ground: Borehole Location: Site 2 (Motor Pool) Elevation and Datum (ft): Top of Casing: Drilling Agency: Stearns Driller: D. Giffels 8/17/93 8/17/93 Date Started: Date Completed: Total: Depth (ft) Depth to Bedrock (ft): NA **CME 750** 5.0 Drilling Equipment: Number of Method of Drilling: **Hollow Stem Augers** Dist.: NA Undist.: NA Core: NA Samples: 8.25" Water Depth Borehole Size (inches): Water Depth Elev. (ft): (ft bgs): Logged By: Checked By: Completion Information: Second of two boreholes named MP2SB2. Grouted to surface. D Javne P Lay Samples Field Analysis Log Blow Count Drilling Time (mdd) (mdd) S/1/B* S/J/B* Number nscs Lithologic Description Remarks PIO FID 1634 .4/0 Artificial fill; sand with gravel. Re-drill of earlier borehole (MP2SB2-A). SAND; brown to dark brown. Grading to grey. 40 1641 SP Collected double volume. "SAND; brownish orange; medium grained sand. TD = 5. 10



					NG, Al					e of Borehole or		: HAZWRAP 2SB3		t <u>1</u> of _1
rojec					31800				14811	e of potentie of	Elevation and I	Groun	nd:	
Boreho					Site 2			1		D. Giffels	Date Started:	8/14/93	f Casing: Date Complete	d: 8/14/93
Orillin	g Ag	ency	/: 		Stearns			1.0	riller:	D. Gilleis	Total:	8.0	Depth to	
Orillin					CME 75						Depth (ft) Number of	Dist.: NA	Bedrock (ft): 1 Undist.: NA	Core: NA
Metho	d of	Dril	ling:		Hollow S	Stem A	Aug	era			Samples: Water Depth	6.5	Water Depth E	
Boreh					3.25"						(ft bgs): Logged By:	0.3	Checked By:	101. (11).
acco	Completion Information: Grouted to surface after sampling accomplished.									npling		Jayne	1	Lay
			ple	s	Field A	nalys	is	Log	3					
Ueprn (feet)	Number Type Blow Count Drilling Time Syl/B* Graphic Syl/B*								SOSN	Lith	ologic Descrip	tion		narks
		MALIAN MARIAN	2 7	0825				**** **** ****	AF	6" of asphalt at surf Artificial fill; light a	ace. grey, medium grair	ned sand.	6" of asphalt at	surface.
	- CAND Bak									SAND; light grey;	medium grained sa	nd.		
_		HERRIE LEGISTE	28	0830	.5,0					-	Ü		PO2B30103 col	lected as
- -		DANGE OF THE PARTY	28	0835	.5/0				SP	Grading to light bro	own.	duplicate.		
5 —		HINGH THE PARTY OF												
-		alland although	15	0845	.1/0					_			Wet at 6.5'.	
-		THINING ALIMIN					ŀ			Grading to with cla	y; moist.		No fixed base s	
-	_	THE PERSON NAMED IN	_										TD = 8'.	
-										-				
10 -										_				
-										-				
-	}									-				
	-									-				
-	-													
15 -	-													
	+													
										-				
	-									-				
	_									<u> </u>				



Project Name: MI ANG, Alpena CRTC - Alpena, MI Client: HAZWRAP MP2SB4-A 931800 Name of Borehole or Well: Sheet _1_ of _1_ Project Number: Ground: Site 2 Borehole Location: Elevation and Datum (ft): Top of Casing: Stearns D. Giffels 8/14/93 Date Completed: 8/14/93 Driller: Drilling Agency: Date Started: Total: Depth (ft) Depth to Bedrock (ft): NA 8.0 **CME 750** Drilling Equipment: Number of Method of Drilling: **Hollow Stem Augers** Dist.: NA Undist.: NA Core: NA Samples: Water Depth 8.25" 6.5 Borehole Size (inches): Water Depth Elev. (ft): (ft bgs): Checked By: Logged By: Completion Information: Grouted to surface after sampling done. Hole was re-drilled later. P Lay J Briegel Samples Field Analysis Log Type Iow Count Drilling Time (mdd) (mdd) Number S/J/B* nscs Remarks Lithologic Description FID PID 0909 .5/0 Asphalt pavement at surface for 6". No sample had noticable SAND; brown to orange brown; medium to coarse hydrocarbon odors. grained, well-sorted, sand; slightly moist. 0913 4.7/0 22 0919 .5/0 SP Color change to light brown. 0923 .1/0 Water at 6.5'. Grading to coarse to very coarse sand. Field screen only run on water. TD = 8'.



roje					931800			RTC - A		ne of Borehole or	Well: MP25	SB4-B	Shee	t <u>1</u> of _
Boreh					Site 2				. 10011		Elevation and D	Patum (ft): Groun		
Orillin					Stearns			I	Oriller:	D. Giffels	Date Started:	8/17/93	Date Complete	d: 8/17/93
Orillin	_			: (CME 7	50					Total: Depth (ft)	5.0	Depth to Bedrock (ft): 1	NA.
Metho	d of	Dril	ling	:]	Hollow	Sten	ιAι	igers			Number of Samples:	Dist.: NA	Undist.: NA	Core: NA
Boreh	ole S	ize (inch	nes):	8.25"	******					Water Depth (ft bgs):		Water Depth E	lev. (ft):
Comp Hol e	letion	n Inf	orm e-d	ation: rill fr	Groute om earl	ed to lier o	sur ne.	face aft	er san	npling done.	Logged By:	ayne	Checked By:	Lay
Samples Field Analysis Log							ysis	Lo	g					
(feet)	Number Type Blow Count Drilling Time PID (ppm) S/J/B* FID (ppm) S/J/B* USCS						Graphic Symbol	nscs	Lith	ologic Descript	ion	Ren	narks	
55			30	1733	0/0					Artificial fill; sand v SAND; orange brow sand. Grading to light bro	vn; medium grained	1, quartzose	No water encour hydrocarbon odd	ntered; no



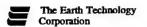
Project Name:	MI	ANG, A	lpena C	RTC - A	Alpena	a, MI	Client	:_HAZWRAI)
Project Numbe	r:	931800			Nan	ne of Borehole or	Well: MP2S	SB5-A	Sheet <u>1</u> of <u>1</u>
Borehole Location	:	Site 2					Elevation and D	Patum (ft): Grou	nd: of Casing:
Drilling Agency:		Stearns		I	Driller:	D. Giffels	Date Started:	8/14/93	Date Completed: 8/14/93
Drilling Equipmen	t:	CME 75	50				Total: Depth (ft)	8.0	Depth to Bedrock (ft): NA
Method of Drilling		Hollow	Stem Au	igers			Number of Samples:	Dist.: NA	Undist.: NA Core: NA
Borehole Size (inc	hes):	8.25"					Water Depth (ft bgs):	6.5	Water Depth Elev. (ft):
Completion Inform Hole was re-d	nation: I rilled	Groute later.	d to sur	face aft	er san	ipling done.	Logged By:	riegel	Checked By: P Lay
Samples Field Analysis Log									
Nu T	Orilling Time	PID (ppm) S/J/B*	FID (ppm) S/J/B*	Graphic Symbol	SOSN	Litho	logic Descript	ion	Remarks
39 - 39 - 32 - 34 - 34 - 34	0950 0955 1000 1005	0/0			SP	Asphalt at surface; un SAND; dark brown/o Grading to light grey. Grading slightly finer	range; with clay la		No sample had noticable hydrocarbon odors. Water at 6.5'. Field screen only run on water. TD = 8'.



Project Name: MI ANG, Alpena CRTC - Alpena, MI Client: HAZWRAP MP2SB5-B Sheet <u>1</u> of <u>1</u> Name of Borehole or Well: _ 931800 Project Number: Ground: Elevation and Datum (ft): Site 2 Top of Casing: Borehole Location: 8/17/93 8/17/93 Date Completed: D. Giffels Date Started: Stearns Driller: Drilling Agency: Depth to Bedrock (ft): NA Total: Depth (ft) 5.0 **CME 750** Drilling Equipment: Number of Undist.: NA Core: NA Dist.: NA **Hollow Stem Augers** Method of Drilling: Samples: Water Depth (ft bgs): Water Depth Elev. (ft): 8.25" Borehole Size (inches): Checked By: Logged By: Completion Information: Grouted to surface after sampling done. Hole was re-drill from earlier one. P Lay D Jayne Log Samples Field Analysis Type Iow Count PID (ppm) FID (ppm) S/J/B* S/J/B* Number SSS Lithologic Description Remarks This is a re-drill of MP2SB5-A. Artificial fill; sand with gravel. .3/0 1657 AF 40 SAND; brownish orange; medium grained sand. SP 1702 0/0 25 No water encountered; no hydrocarbon odors detected. TD = 5. 10 15



Project Name: M	I ANG, Alpena C	RTC - A	Alpena	a, MI		: HAZWRAF		
Project Number: _	931800		Nan	ne of Borehole or V		2SB6		t <u>1</u> of <u>1</u>
Borehole Location:	Site 2				Elevation and I	Datum (ft): Ground	nd: of Casing:	
Drilling Agency:	Stearns	I	Oriller:	D. Giffels	Date Started:	8/15/93	Date Completed	1: 8/15/93
Drilling Equipment:	CME 750				Total: Depth (ft)	6.0	Depth to Bedrock (ft): N	IA.
Method of Drilling:	Hollow Stem A	ıgers			Number of Samples:	Dist.: NA	Undist.: NA	Core: NA
Borehole Size (inches):	8.25"				Water Depth (ft bgs):	5.5	Water Depth El	ev. (ft):
Completion Information cement/bentonite	Grouted to sur mixture.	face wit	h		Logged By:	riegel	Checked By:	Lay
Samples	Field Analysis	Lo	g					
Depth (feet) Number Type Blow Count Drilling		Graphic Symbol	SOSN		ogic Descript		Rema	arks
32 1020 31 1033 5 -	5 0/0			Artificial fill; 2.5 feet and gravel; with org	anic debris; loose	e; dry.	Base of fill at 2.5° No hydrocarbon owhile drilling/sam Wet at 5.5°. TD = 6°.	odors detected



Project Name: MI ANG, Alpena CRTC - Alpena, MI Client: HAZWRAP MP2SB7 Sheet <u>1</u> of <u>1</u> 931800 Name of Borehole or Well: Project Number: Ground: Elevation and Datum (ft): Site 2 Borehole Location: Top of Casing: 8/15/93 8/15/93 D. Giffels Date Completed: Stearns Driller: Date Started: Drilling Agency: Depth to Bedrock (ft): NA Total: 6.0 **CME 750** Drilling Equipment: Depth (ft) Number of Dist.: NA Undist.: NA Core: NA Method of Drilling: **Hollow Stem Augers** Samples: Water Depth (ft bgs): 6.0 Water Depth Elev. (ft): 8.25" Borehole Size (inches): Logged By: Checked By: Completion Information: Grouted to surface with cement/bentonite mixture. P Lay J Briegel Field Analysis Samples Log Type Iow Count Orilling FID (ppm) PID (ppm) S/1/B* Number Time nscs Remarks Lithologic Description Artificial fill; topsoil covering gravelly sand. 1056 AF -SAND; mottled orange brown and brown; medium to coarse sand; loose; moist. 1101 SP Grading to light brown; to mostly fine to medium 1106 grained sand. Wet at about 6'. TD = 6'.



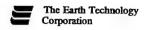
Project Name: MI ANG, Alpena CRTC - Alpena, MI Client: HAZWRAP MP2SB8 931800 **Project Number:** Name of Borehole or Well: Sheet 1 of 3Ground: Borehole Location: Site 2 Elevation and Datum (ft): Top of Casing: Drilling Agency: Stearns Driller: D. Giffels 8/15/93 8/15/93 Date Started: Date Completed: Total: Depth (ft) Depth to Bedrock (ft): NA **CME 750** 58.0 Drilling Equipment: Number of **Hollow Stem Augers** Method of Drilling: Dist.: NA Undist.: NA Core: NA Samples: 8.25" Water Depth Borehole Size (inches): 6.0 Water Depth Elev. (ft): (ft bgs): Completion Information: Grouted to surface with Logged By: Checked By: cement/bentonite slurry. D Javne P Lav Samples Field Analysis Log Depth (feet) Type Iow Count Drilling Time (mdd) (mdd) S/J/B* S/1/B* Number nscs Lithologic Description Remarks PID FIO 20 1246 0/0 Artificial fill; topsoil and gravelly sand from surface to 1 foot deep. No field screen. SAND; orange brown; medium grained, quartzose 1254 0/0 19 Field screen done on 2'-4' sample. 1259 25 0/0 -Grading to light brown. Field screen done on 4'-6' sample. SP SAND. 10 Augered without sampling from 6' to 54'. 15 SAND; light brown; medium grained, quartzose sand. SP



Project Name: MI ANG, Alpena CRTC - Alpena, MI Client: HAZWRAP

Project Number: 931800 Name of Borehole or Well: MP2SB8 Sheet 2 of 3

Samples Field Analysis Log Lithologic Description Remarks Sp. Sp. Same as above. Sp. Same as above. Sp. Same as above. Sp. Same as above.	<u> </u>		e of Borenole or Well:			oject Number: 931800				rioje		
25 — Same as above. SP — Same as above. Some as above.				3	Log	nalysis	Field A	es	ıple	San	5	
25— Same as above. SP — Same as above. Some as above.	ks	Remarks	Lithologic Description	SOSN	Graphic Symbol			Drilling Time	Blow Count	Type	Number	Depth (feet)
40 — 40 — — — — — — — — — — — — — — — —			Same as above.									30 —



Project Name: MI ANG, Alpena CRTC - Alpena, MI Client: HAZWRAP

Project Number: 931800 Name of Borehole or Well: MP2SB8 Sheet 3 of 3

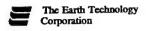
			npl	PS .			nalysis	Lo		Defende of Well:	Sheet 3 of 3
Depth (feet)	Number	Type	Blow Count	Drilling Time	PID (ppm)	S/1/B*		Graphic Symbol	SOSO	Lithologic Description	Remarks
50 —		The state of the s	52	1321					SP	CLAY; with trace of sand; medium stiff; plastic.	Field screen done on 54'-56' sample. Shelby Tube sampler for 56'-58'.
60 —											TD = 58'.
65 —											
70 —											-



rojec	4 Ni				931800	pena Cl			e of Borehole or	Well: MP	2SB9	Sheet	_1_ of
Boreho					Site 2			1 (1411	0 0 20 0 0 0 0	Elevation and I	Datum (ft): Groun	nd: f Casing:	
oreno Orillin					Stearns		Г	riller:	D. Giffels	Date Started:	8/16/93	Date Completed	8/16/93
) Drillin			_		CME 75	50				Total: Depth (ft)	6.0	Depth to Bedrock (ft): N	A
Metho						Stem Au	igers		***	Number of Samples:	Dist.: NA	Undist.: NA	Core: NA
Boreho					8.25"					Water Depth (ft bgs):		Water Depth Ele	ev. (ft):
Compl	etion	Inf	om	ation:	Groute	d to sur	face wit	h		Logged By:		Checked By:	
cem	ent/	ber	itoi	nite sl	-					Р	Lay	D J	ayne
-	S	am				nalysis		g					
(feet)	Nur Blow Dri T T S S S S S S S S S S S S S S S S S									ologic Descrip		Rema	arks
		Sates Henry Market Language L.	31	1510	.4/0		*** *	AF	Asphalt 2" thick; undepth of 1 foot.			GC sample collec	ted.
=		ALL MALL ARELAND	34	1517	.2/0				SAND; brownish ye grained; no odor;	slightly moist.	sand fine		
=		TAPITABELLI.						SP				Soil sample (and collected.	duplicate)
		HAPPIN STATE	26	1524	.1/0							concered.	
5		BELLANDET THE							Ļ.				
_		Hell							<u> </u>			TD = 6'.	
_									- -				
-									- -				
-									-				
10 —									-				
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-							}		E				
15 —									_				
-									_				
-									_				
-	1								F				



	ANG, Alpena C					HAZWRAF	-	
Project Number: _	931800		Nan	ne of Borehole or	Well: MP2	MW6		Sheet 1 of 2
Borehole Location:	Site 2				Elevation and D	eatum (ft): Ground Top of	nd: of Casing	;; <u></u>
Drilling Agency:	Stearns	Г	Priller:	D. Giffels	Date Started:	8/16/93	1	Completed: 8/16/93
Drilling Equipment:	CME 750				Total: Depth (ft)	42	Depti Bedro	to ock (ft): NA
Method of Drilling:	Hollow Stem Au	igers			Number of Samples: NA	Dist.: NA		st.: NA Core: NA
Borehole Size (inches):	8.25"			· · · · · · · · · · · · · · · · · · ·	Water Depth: (ft bgs)	9.0	Water	Depth Elev.(ft):
Completion Information casing. See monit	Completed as a coring well contru	monito	oring	well, with 2"	Logged By:	ayne	Checl	ked By: P Lay
Samples	Field Analysis	L	og				6	
Number Type Blow Count Time	PID (ppm) S/B* FID (ppm) S/B*	Graphic Symbol	SOSU	Litho	logic Descripti	on	Well Construction Diagram	Remarks
5 — 28 0915 10 — 28 0915 20 — 54 0921			SP SC GW	Artificial fill; dark by SAND; olive yellow quartz-rich, s Grading to pale yello Grading to gray. CLAY. With CLAYEY SAN GRAVEL; well-grad Coarse sand.	(2.5Y 6/8); mediunand. w (2.5Y 7/4).	m grained,		Collected soil samples and water samples periodically. Hydropunch sample taker between 9'-14'. Field screen sample only. Hydropunch sample taker between 24'-28'.



Project Name: MI ANG, Alpena CRTC - Alpena, MI Client: HAZWRAP

Name of Borehole or Well: MP2MW6 Sheet 2 of 2

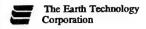
Proje	ect N	um	ber	: <u>93</u>	1800			Nan	ne of Borehole or Well: MP2MW6		Sheet 2 of 2
	S	am	ple	s	Field A	nalysis	I	лоg		6	
Depth (feet)	Number	Type	Blow Count	Orilling Time	PID (ppm) S/B*	FID (ppm) S/B*	Graphic Symbol	sasn	Lithologic Description	Well Construction Diagram	Remarks
35				1007				SP	SAND; medium grained (as above).		TD = 42'.



Project Name: MI ANG, Alpena CRTC - Alpena, MI Client: HAZWRAP MP2MW7 Sheet <u>1</u> of <u>1</u> 931800 Name of Borehole or Well: Project Number: Ground: Site 2 Elevation and Datum (ft): Borehole Location: Top of Casing: D. Giffels 8/17/93 Date Completed: 8/17/93 Stearns Driller: Drilling Agency: Date Started: Depth to Bedrock (ft): NA Total: Depth (ft) 15 **CME 750** Drilling Equipment: Number of Samples: NA Method of Drilling: **Hollow Stem Augers** Dist.: NA Undist.: NA Core: NA Water Depth: (ft bgs) 7.0 8.25" Water Depth Elev.(ft): Borehole Size (inches): Logged By: Checked By: Completion Information: Completed as a monitoring well, with 2" casing. See monitoring well contruction log. P Lay D Jayne Well Construction Diagram Field Analysis Samples Log ow Count (ppm) (mdd) Number nscs ě တ် တ် Lithologic Description Remarks PID FID Artificial fill; SAND with gravel. 1742 0/0 Field screen sample. SAND; orange-brown; medium grained. 14 1746 0/0 Field screen sample. Wet at about 7'. SP Same as above. 10 15 TD = 15. 20 25



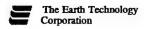
Project Name: MI ANG, Alpena CRTC - Alpena, MI Client: HAZWRAP MP2SB10 Sheet 1 of 1 931800 Name of Borehole or Well: Project Number: Ground: Elevation and Datum (ft): Site 2 Borehole Location: Top of Casing: 9/13/93 9/13/93 Date Completed: NA D. Jayne Driller: Date Started: Drilling Agency: Depth to Bedrock (ft): NA Total: Depth (ft) 4.0 **AMS Soil Auger** Drilling Equipment: Number of Dist.: NA Undist.: NA Core: NA **Hand Augers** Method of Drilling: Samples: Water Depth Water Depth Elev. (ft): Borehole Size (inches): (ft bgs): Checked By: Logged By: Completion Information: Grouted to surface. D Jayne P Lay Field Analysis Samples Log Depth (feet) Type Blow Count Drilling Time PID (ppm) FID (ppm) S/J/B* S/1/B* Number nscs Remarks Lithologic Description This is a hand auger borehole. Artificial fill; gravelly sand/sandy gravel. 0917 AF 0935 Collected 2 fixed base soil samples and 2 QA/QC samples. SAND; orange brown; medium grained, well sorted, SP sand; no odor. TD = 4'.



Project Name: MI ANG, Alpena CRTC - Alpena, MI Client: HAZWRAP **CG3SB12** 931800 Project Number: Name of Borehole or Well: Sheet 1 of 1 Ground: Site 3 Borehole Location: Elevation and Datum (ft): Top of Casing: Stearns D. Giffels 8/26/93 8/26/93 Drilling Agency: Driller: Date Started: Date Completed: Total: Depth (ft) Depth to Bedrock (ft): NA **CME 750** Drilling Equipment: 12.0 Number of Samples: **Hollow Stem Augers** Method of Drilling: Dist.: NA Undist.: NA Core: NA Water Depth 8.25" Borehole Size (inches): Water Depth Elev. (ft): (ft bgs): Logged By: Checked By: Completion Information: Grouted to surface with cement/bentonite slurry. M Stoker P Lay Samples Field Analysis Log Depth (feet) Type Iow Count Drilling Time (mdd) (mdd) Number S/J/B* S/J/B* SOSO Lithologic Description Remarks PID FIO 0850 0/0 Thin layer of topsoil present. Topsoil; dark brown; grass and roots; 4" thick. Gas chromatograph sample -SAND; orange-brown; fine sand; moist. (P3SB12A). SP 23 0855 0/0 Gas chromatograph sample (P3SB12B). Grading to greyish brown; to fine to medium grained 20 0900 Gas chromatograph sample (P3SB12C). SP 10 0905 Same as above, but dense; very moist. Gas chromatograph sample (P3SB12D). TD = 15'. 15



Project Name: MI ANG, Alpena CRTC - Alpena, MI Client: HAZWRAP **CG3SB13** Sheet 1 of 3Name of Borehole or Well: 931800 **Project Number:** Ground: Elevation and Datum (ft): Site 3 Borehole Location: Top of Casing: 8/26/93 8/26/93 D. Giffels Date Completed: Date Started: Stearns Driller: Drilling Agency: Depth to Bedrock (ft): NA Total: 55.0 **CME 750** Drilling Equipment: Depth (ft) Number of Core: NA Dist.: NA Undist.: NA **Hollow Stem Augers** Method of Drilling: Samples: Water Depth 13.5 Water Depth Elev. (ft): 8.25" Borehole Size (inches): (ft bgs): Checked By: Logged By: Completion Information: Installed a temporary piezometer (CG3PZ2), which was pulled out 9/12/93 and grouted with M Stoker P Lav Hole Plug. See piezometer contruction log. Field Analysis Log Samples Count Drilling Time PID (ppm) -ID (ppm) S/1/B* S/J/B* Number Type nscs Lithologic Description Remarks 3 AF Topsoil; dark brown; with grass and roots; 6" deep. 20 1110 0/0 Gas chromatograph sample SAND; orange brown; fine to medium sand; moist. (P3SB13A). 1115 0/0 SAND; orange brown; fine, rounded sand; moist. Gas chromatograph sample SP (P3SB13B). 1119 0/0 19 Same as above. Gas chromatograph sample (P3SB13C). 0/0 Gas chromatograph sample (P3SB13D). 0/0 Grading to with trace of fine gravel; wet. Gas chromatograph sample (P3SB13E). SP Collect hydropunched sample at Same as above.



Project Name: MI ANG, Alpena CRTC - Alpena, MI Client: HAZWRAP

Project Number: 931800 Name of Borehole or Well: CG3SB13 Sheet 2 of 3

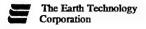
	5	San	npl	es	Field A	nalysis	Lo	g		
Depth (feet)	Number	Type	Blow Count	Drilling Time	PID (ppm) S/J/B*	FID (ppm)	Graphic Symbol	SOSN	Lithologic Description	Remarks
25 —								SP	Same as above.	
30 —								SP	Same as above.	
40 —									Same as above.	
45 —								SP	Same as above.	



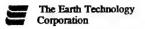
Project Name: MI ANG, Alpena CRTC - Alpena, MI Client: HAZWRAP

Project Number: 931800 Name of Borehole or Well: CG3SB13 Sheet 3 of 3

Proje	oject Number: 931800 Name of Borenole of Well: Costal Slicet 5 of 5												
	S	an	ıple	s	Field A	nalysis	Log	3					
Depth (feet)	Number	Type	Blow Count	Orilling Time	PID (ppm) S/J/B*	FID (PPm)	Graphic Symbol	SOSO	Lithologic Description	Remarks			
50 —			29	1205	0/0			CL	SAND; same as above. Grading to greyish brown; to fine to medium sand. SILTY CLAY; grey; plastic.				
55 —		Today of the second	-	1225					-	Shelby Tube sample from 53' to 55'; stiff grey clay. TD = 55'.			
60 -													
70 -													



Project Name: MI ANG, Alpena CRTC - Alpena, MI Client: HAZWRAP CG3SB11 931800 Project Number: Name of Borehole or Well: Sheet _1_ of _1 Ground: Borehole Location: Site 3 Elevation and Datum (ft): Top of Casing: Stearns D. Giffels Drilling Agency: Driller: 8/26/93 Date Started: 8/26/93 Date Completed: Total: Depth (ft) Depth to Bedrock (ft): NA **CME 750** Drilling Equipment: 12.0 Number of Samples: **Hollow Stem Augers** Method of Drilling: Dist.: NA Undist.: NA Core: NA Water Depth 8.25" Borehole Size (inches): Water Depth Elev. (ft): (ft bgs): Logged By: Checked By: Completion Information: Borehole was grouted to surface with cement/bentonite. M Stoker P Lay Samples Field Analysis Log Depth (feet) Type Iow Count (mdd) (mdd) S/1/B* Number nscs Lithologic Description PID Remarks FID 0/0 30 0820 Topsoil; dark brown; grass, roots; 4" deep. Thin layer of topsoil. Collected duplicate sample. _SAND; yellowish brown; fine to medium sand; moist. SP 0825 17 0/0 Same as above. Gas chromatograph sample (P3SB11A). 24 Gas chromatograph sample (P3SB11B). Grading to greyish brown; increase in moisture. 10 28 Gas chromatograph sample (P3SB11C). TD = 12'. 15 -



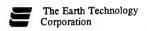
roje	ect N	lan	ıe:	MI	ANG, A	lpen	а С	RTC - A	Alpena	a, MI	Client	HAZWRAF		
roje	ct N	lun	abe	r:	931800				Nan	ne of Borehole o	Well: CG3	3PZ1	Sheet	_1_ of _
loreh	ole L	oca	tion		Site 3		-	-			Elevation and D	eatum (ft): Groun	nd: of Casing:	
Prilli	ng Ag	gen	:y:		Stearns	3		I	Oriller:	D. Giffels	Date Started:	8/25/93	Date Completed	8/25/93
)rilli:	ng Ec	quip	men	t:	CME 7	50					Total: Depth (ft)	20.0	Depth to Bedrock (ft): N	A
/leth	od of	Dri	lling	:	Hollow	Sten	ı Aı	igers			Number of Samples:	Dist.: NA	Undist.: NA	Core: NA
oreh	nole S	Size	(incl	nes):	8.25"						Water Depth (ft bgs):	13.5	Water Depth Ele	ev. (ft):
omp	oletion	n In Se	form	iation:	Comp	leted nstru	as a	n piezon n log.	neter,	with 2"	Logged By:	riegel	Checked By:	Lay
	S		ple	s	Field	Anal	ysis	Lo	g					
(feet)	Number	+				Graphic Symbol	SOSO	Lith	nologic Descript	Remarks				
		Security Control of the Control of t	9	1355	0/0					SAND; brown orar well-sorted, quar	ige; medium to coars tzose sand; loose; sli	se, ghtly moist.	No hydrocarbon o	dors smelled
		Dotation	9	1403	0/0				SP	Same as above.				
		O O O O O O O O O O O O O O O O O O O								Grading to brown.			Wet at about 1	
				1409	18.3/0				SP	Same as above.			Hydrocarbon odo from below 15 fe	



Project Name: MI ANG, Alpena CRTC - Alpena, MI Client: HAZWRAP

Project Number: 931800 Name of Borehole or Well: CG3PZ1 Sheet 2 of 2

	Samples Field Analysis				nalysis	Lo		of Boreloic of Well.		
ح⊋ا		-	+	_						
Depth (feet)	Number	Type	Blow Coun	Drilling Time	PID (ppm) S/J/B*	FID (ppm) S/J/B*	Graphic Symbol	SOSO	Lithologic Description	Remarks
25 —										TD = 20'.
30										
35 —										
40 —										
45 —									- - - - -	



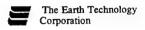
roject Nun	nber	:9	931800			Nan	ne of Borehole or	Well:CG31	MW6		Sheet 1 of 2		
orehole Loca	tion:		Site 3					Elevation and Datum (ft): Ground: Top of Casing:					
rilling Agen	cy:		Stearns		1	Driller:	D. Giffels	Date Started:	8/25/93	Date Completed: 8/30/93			
rilling Equip	ment	: (CME 75	0				Total: Depth (ft)	33	De Bea	pth to drock (ft): NA		
lethod of Dr	illing]	Hollow S	Stem Au	igers			Number of Samples: NA	Dist.: NA	Undist.: NA Core: NA			
orehole Size	(incl	es):	8.25"					Water Depth: (ft bgs)	15.0	Wa	ater Depth Elev.(ft):		
ompletion Ir	form e m e	ation: onitor	Comple ing well	ted as a constru	monit	oring og.	well, with 2"	Logged By:	riegel		ecked By: P Lay		
Sar	nple	s	Field A	nalysis]	og				5			
(feet) Number Type	13 1	Drilling Time	PID (ppm) S/B*	FID (ppm) S/B*	Graphic Symbol	SOSN	Litho	logic Descripti	on	Mell	Remarks		
5	42	1452 1456	0/0			SP CL SW SP	sand; loose;	dium to coarse grai slightly moist. the brown with oran dium to coarse san	ned, quartz nge brown d; loose;	HA	Wet at about 15'. Hydropunch sample 16'-18'. Lithology not recorded past 15'. No hydrocarbon odors detected in samples or cuttings. Hydropunch sample 24'-28'.		



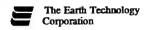
Project Name: MI ANG, Alpena CRTC - Alpena, MI Client: HAZWRAP

Project Number: 931800 Name of Borehole or Well: CG3MW6 Sheet 2 of 2

Troje			ıple			nalysis		лап	Sheet or		
-	- 2	all	-					лу	E		
Depth (feet)	Number	Type	Blow Coun.	Orilling Time	PID (ppm) S/B*	FID (ppm) S/B*	Graphic Symbol	SOSO	Lithologic Description	Well Construction Diagram	Remarks
- - - - -									- - - - - - -		TD = 33'.
35 —									- - - - -		
40									- - - - - - - -		
45									- - - - - - - -		
45 —									- - - - - - - -		
50											
55 —									- - - - - - - -		
60											
-									- - - - - -		-
65 —									- - - - - - -		
70									_		



roje	ct N	un	ıbeı	:	931800			Nan	ne of Borehole or	Well: CG3N	1W7		Sheet 1 of _		
	ole L				Site 3					Elevation and Datum (ft): Ground: Top of Casing:					
Orilli	ng Ag	geno	y:	-	Stearns		I	Oriller:	D. Giffels	Date Started:	8/30/93		ompleted: 8/30/93		
Orilli	ng Eq	ļuip:	ment	: (CME 75	50				Total: Depth (ft)	35	Depth 1 Bedroc	to k (ft): NA		
Metho	od of	Dri	lling	: 1	Hollow	Stem Au	ıgers			Number of Samples: NA	Dist.: NA	Undist.	: NA Core: NA		
Boreh	nole S	ize	(incl	nes):	8.25"					Water Depth: (ft bgs)	14.0	Water I	Depth Elev.(ft):		
Comp casi	oletion	n In	form	ation: ionito	Complering wel	eted as a I contru	monito	oring g.	well, with 2"	Logged By:	∠ay	Checke	d By: J Briegel		
			ple	s	Field A	nalysis	L	og				<u>e</u> =			
(feet)	Number	Type	low Count	Drilling Time	PID (ppm) S/B*	FID (ppm) S/B*	Graphic Symbol	SOSN	Litho	logic Descriptio	on	Well Construction Diagram	Remarks		
5			37	1352 1358	0/0			SP		t. rown; no odor; with gravel.	trace of fine,		Wet at about 14'. Hydropunch sample at 14'.		



Project Name: MI ANG, Alpena CRTC - Alpena, MI Client: HAZWRAP

Project Number: 931800 Name of Borehole or Well: CG3MW7 Sheet 2 of 2

	S	San	ple	es	Field A	nalysis	I	лоg		6	
Depth (feet)	Number	Type	Blow Count	Drilling Time	PID (ppm) S/B*	FID (ppm) S/B*	Graphic Symbol	SOSN	Lithologic Description	Construction Diagram	Remarks
-								SP			29'.
35 —				1520							TD = 35'.
40											Hydropunch sample at 35'-39'.
45 —											
45											
50 —											
- - - -											
55											
60 -											
-											-
65											
70											



roje	ct N	am	e:	MI A	NG,	Alpen	a Cl	RTC -	Alpena	a, MI	Client	HAZWRAP	
roje	ct N	um	ber	: <u> </u>	93180	0			Nan	ne of Borehole or	Well: TF4	SB15	Sheet _1_ of
oreh	ole L	ocat	tion:	5	Site 4						Elevation and I	Datum (ft): Groun	d: f Casing:
rillir	ng Ag	genc	y:		Stearr	ıs			Driller:	D. Giffels	Date Started:	8/11/93	Date Completed: 8/11/93
rillir	ng Eq	Juipi	ment	: (CME	750		,		·	Total: Depth (ft)	43.5	Depth to Bedrock (ft): NA 43
/letho	od of	Dril	lling	:]	Hollo	w Ster	n Au	igers			Number of Samples:	Dist.: NA	Undist.: NA Core: NA
loreh	ole S	ize	(incl	nes):	8.25"						Water Depth (ft bgs):	26.0	Water Depth Elev. (ft):
Comp	letion ent/	n Ini /bei	form nto	ation: nite sl	Bore urry a	hole w	as g amp	routed ling fi	with nished.		Logged By: J Briegel	/M Stoker	Checked By: J Briegel
	S	Sam	ple	s	Field	l Anal	ysis	L	og				
(feet)	Number	Type	13 1	Orilling Time	PID (ppm)	S/J/B*	S/J/B*	Graphic Symbol	SOSN		ologic Descript		Remarks
_		Britarille	27	0850	0/0			***	AF	Artificial fill; grassy	topsoil with grave	l at surface.	
5 —		and the same of th	24	0900	0/0					SAND; brown to lig well-sorted, well-	rounded, sand; no	grained, odor.	
		District Control of the Control	86	0909	0/0				SP	Grading to GRAVE SAND; light brown grained quartz sa		n to coarse vel.	
15 —		Print John City	106	0918	0/0				SW	Same as above, but gravel.	with angular to su	bangular RF	
		li valore alban	10	4 0927	0/0				SP	-			



Project Name: MI ANG, Alpena CRTC - Alpena, MI Client: HAZWRAP

Project Number: 931800 Name of Borehole or Well: TF4SB15 Sheet 2 of 2

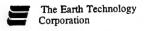
	S	an	ple	es	Field A	nalysis	Lo	g		
Depth (feet)	Number	Type	Blow Count	Drilling Time	PID (ppm) S/J/B*	FID (ppm)	Graphic Symbol	SOSO	Lithologic Description	Remarks
								SP	SAND; light brown; well-sorted quartz sand.	
25 —				s en dame et al.					Same as above, but wet.	Wet at about 26'.
30 —		I I BARRAGARIA DE LA		0940	0/0			CL	CLAY; brown; with trace of silt; plastic.	Attempted Shelby Tube sampling
		Bellista pater	68	1015	0/0				SAND; light brown; fine to medium grained quartz sand; with trace of silt and clay.	unsuccessfully at 31'.
35 —		Marriel Marrier Property of the Party of the	20	1035	0/0				-	Infrequent, thin lenses of clay present between 30' and 40'.
	5	a shippy and the second	34 13	1047	0/0			SP	Grading to with some silt.	
40 —	5	A HARAFARE	23	1100	0/0				- - - - -	
		SALAN AND AND AND AND AND AND AND AND AND A		1140	0/0			CH LS	CLAY; brown; plasticLIMESTONE; light grey to light brown; with calcitefracture filling; top of the bedrock.	Shelby Tube sample at 42'-43.5' (with two tries). TD = 43.5'; stopped after hitting
45 —										TD = 43.5°; stopped after hitting bedrock contact.



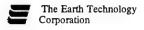
roje	ct N	um	ber	:	931800_			Nan	ne of Borehole or	Well: SF5M	IW5		Sheet 1 of _
Boreh	ole L	ocat	ion:		Site 5					Elevation and Da	ntum (ft): Groun	nd: of Casing:	
Drilli	ng Ag	gency	<i>י</i> :		Stearns		Г	Oriller:	D. Giffels	Date Started:	8/12/93		ompleted: 8/12/93
Drilli	ng Eq	uipn	nent	: (CME 75	0				Total: Depth (ft)	14	Depth t Bedroc	o k (ft): NA
Meth	od of	Dril	ling		Hollow	Stem Au	igers			Number of Samples: NA	Dist.: NA	Undist.	: NA Core: NA
Borel	ole S	ize (inch	es):	8.25"	·				Water Depth: (ft bgs)	5.0	Water I	Depth Elev.(ft):
Comp See	oletion	n Info	orm:	ation: g well	Installe contru	d a 2" d	liameter g.	mon	itoring well.	Logged By:	nyne	Checke	d By: J Briegel
	S	am	ple	S	Field A	nalysis	L	og				<u>9</u> -	
Depth (feet)	Number	Type	3	Orilling Time	PID (ppm) S/B*	FID (ppm) S/B*	Graphic Symbol	SOSA	Lithe	ologic Descriptio	on	Well Construction Diagram	Remarks
5			1	0835 0842 0850	a.'			SP CL SP	Artificial fill; dark to etc. SAND; orange brown and state of the second and	wn; medium grained own. tht brown; moist. wn; medium grained	sand.		Wet at about 5'. TD = 14'.



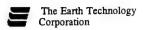
Project Name: MI ANG, Alpena CRTC - Alpena, MI Client: HAZWRAP SF5MW6 931800 Project Number: Name of Borehole or Well: Sheet 1 of 1 Ground: Borehole Location: Site 5 Elevation and Datum (ft): Top of Casing: D. Giffels Drilling Agency: Stearns Driller: 8/12/93 8/12/93 Date Started: Date Completed: Depth to Bedrock (ft): NA Total: **CME 750** 21 Drilling Equipment: Depth (ft) Number of **Hollow Stem Augers** Method of Drilling: Dist.: NA Undist.: NA Core: NA Samples: NA Water Depth: 8.25" 5.0 Borehole Size (inches): Water Depth Elev.(ft): (ft bgs) Logged By: Checked By: Completion Information: Completed as a monitoring well; with 2" casing. See monitoring well contruction log. D Jayne J Briegel Well Construction Diagram Samples Field Analysis Log Depth (feet) ow Count Drilling Time Cppm) S/B* (mdd) Number S/B* nscs Lithologic Description Remarks PID 댎 1340 0/0 Artificial fill; dark brown; sand with roots, etc. Field screen spoon sample. SAND; light brown; medium grained sand. 1350 0/0 -SANDY CLAY; light grey; moist. Wet at about 5'. 4 1355 0/0 CL CLAY; light grey; clay with sand; saturated. Sample not analyzed. 10 Lithology not described between 10' and 19': assumed to be mostly SAND; light grey; sand with clay. mostly sand. 15 SC SAND; light grey; sand with clay. 15 1400 4/0 20 SAND; with clay and limestone gravel; very well-graded. TD = 21'; limestone bedrock at bottom of orehole. 25



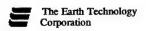
Project Name: MI ANG, Alpena CRTC - Alpena, MI Client: HAZWRAP SF5MW7 Sheet 1 of 1 Name of Borehole or Well: 931800 Project Number: Ground: Elevation and Datum (ft): Site 5 Borehole Location: Top of Casing: 8/12/93 8/12/93 Date Completed: D. Giffels Date Started: Stearns Driller: Drilling Agency: Depth to Bedrock (ft): NA Total: 20 **CME 750** Drilling Equipment: Depth (ft) Number of Samples: NA Core: NA Undist.: NA Dist.: NA **Hollow Stem Augers** Method of Drilling: Water Depth: Water Depth Elev.(ft): 6.0 8.25" Borehole Size (inches): (ft bgs) Checked By: Logged By: Completion Information: Completed as a monitoring well; with 2" casing. See monitoring well contruction log. D Jayne J Briegel Well Construction Diagram Field Analysis Log Samples Depth (feet) FID (ppm) S/B* ow Count D (ppm) S/8* Drilling Number SSS Type Time Remarks Lithologic Description PIO m Field screen of sample AF Artificial fill; dark brown; sand with grass roots. 1.3/0 1552 -SAND; light brown mottled orange; medium to nly. coarse grained quartz sand. 10 1555 .9/0 Grading to light brown. SP Wet at about 6 feet. 35 1602 .5/0 Grading to brown; wet. 15 SP Grades to greyish brown, mostly coarse sand. Sand grading much coarser, with much gravel. Pushed Shelby tube 18' to .5/0 1625 20' down; to limestone SANDY CLAY; grey to greyish brown; soft, plastic bedrock at 20'. CL TD = 20'; at top of 20 clay with 40% sand. bedrock. 25



Project Name: MI ANG, Alpena CRTC - Alpena, MI Client: HAZWRAP 931800 SF5MW8 Project Number: _ Name of Borehole or Well: Sheet <u>1</u> of <u>1</u> Ground: Site 5 Borehole Location: Elevation and Datum (ft): Top of Casing: D. Giffels Stearns 8/31/93 Drilling Agency: Driller: Date Started: 8/31/93 Date Completed: Total: Depth (ft) Depth to Bedrock (ft): NA **CME 750** Drilling Equipment: 20 Number of **Hollow Stem Augers** Method of Drilling: Dist.: NA Undist.: NA Core: NA Samples: NA Water Depth: (ft bgs) Borehole Size (inches): Water Depth Elev.(ft): Completion Information: Installed monitoring well, with 2" casing. See monitoring well contruction log. Logged By: Checked By: J Briegel/D Jayne D Jayne Well Construction Diagram Field Analysis Samples Log Type Blow Count Orilling Time FID (ppm) S/B* (mdd) Number S/B* nscs Lithologic Description Remarks PID SP SAND. No other descriptions recorded. 10 SAND. 15 SP Drive hydropunch sampler to 19'; collect sample for field screen. SAND. 20 1015 TD = 20. 25 —



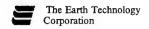
Project Name: MI ANG, Alpena CRTC - Alpena, MI Client: HAZWRAP SF5MW9 Sheet 1 of 1 931800 Name of Borehole or Well: Project Number: Ground: Elevation and Datum (ft): Site 5 Borehole Location: Top of Casing: 9/10/93 9/9/93 D. Giffels Date Completed: Drilling Agency: Stearns Driller: Date Started: Depth to Bedrock (ft): NA Total: 19 **CME 750** Drilling Equipment: Depth (ft) Number of Dist.: NA Undist.: NA Core: NA **Hollow Stem Augers** Method of Drilling: Samples: NA Water Depth: 8.0 Water Depth Elev.(ft): 8.25" Borehole Size (inches): (ft bgs) Logged By: Checked By: Completion Information: Completed as a temporary monitoring well; with 2" casing. See monitoring well contruction log. J Briegel/D Jayne D Jayne Well Construction Diagram Field Analysis Samples Log Type Blow Count Depth (feet) D (ppm) S/B* Drilling Time D (ppm) S/B* Number SSS Remarks Lithologic Description 딤 PID SAND; orange brown; medium grained sand. SP _Same as above. Collect hydropunch 1404 sample for field screen. 10 Collect hydropunch 1440 sample for field screen. Same as above. Collect hydropunch sample, and a duplicate, for field screen. 20 TD = 19'; auger refusal at alluvium/limestone bedrock contact.



Project Name: M	ANG, Alpena C	RTC - A	Alpen	a, MI	Client:	HAZWRAF)	
Project Number: _	931800		Nan	ne of Borehole or '	Well: SF5T	W10	Sheet	_1_ of _1_
Borehole Location:	Site 5				Elevation and D	atum (ft): Groun	nd: of Casing:	
Drilling Agency:	Stearns	I	Oriller:	D. Giffels	Date Started:	9/10/93	Date Completed	: 9/10/93
Drilling Equipment:	CME 750				Total: Depth (ft)	15.0	Depth to Bedrock (ft): N	A
Method of Drilling:	Hollow Stem Au	ugers			Number of Samples:	Dist.: NA	Undist.: NA	Core: NA
Borehole Size (inches):	8.25"				Water Depth (ft bgs):	5.0	Water Depth Ele	ev. (ft):
Completion Information cement/bentonite.	Grouted to sur	face wit	h		Logged By: J Br	iegel	Checked By:	ayne
Samples	Field Analysis	Lo	g		-L. ,			
Depth (feet) Number Type Blow Count Drilling	PID (ppm) S/J/B* FID (ppm) S/J/B*	Graphic Symbol	SOSN	Litho	logic Descripti	ion	Rema	arks
10			SP	SAND; fine to medium	m grained; with R	F.	For detailed lithologie log for SF5M ³ TD = 15 ³ . Hydropunched for between 15 ³ and 1	r water sample



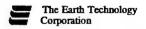
rojec	t Nı	ıml	ber:	9	931800			Nan	ne of Borehole or	Well:LF6N	MW4		Sheet 1 of _
Boreho	le Lo	cati	on:	5	Site 6					Elevation and D	atum (ft): Grou	nd: of Casing:	
Orillin	g Age	ency	:	5	Stearns		I	Priller:	D. Giffels	Date Started:	8/11/93	Date C	Completed: 8/11/93
rillin	g Equ	ipn	ent:	(CME 75	0				Total: Depth (ft)	20	Depth Bedroo	to ck (ft): NA
/letho	d of I	Drill	ing:]	Hollow	Stem Au	igers			Number of Samples: NA	Dist.: NA	Undist	.: NA Core: NA
oreho	ole Siz	ze (i	nche	s): 8	3.25"					Water Depth: (ft bgs)	9.0	Water	Depth Elev.(ft):
ompl dian well	etion 1eter	Info ca tru	ormat sing	ion: g. La n log	Comple ocated a	eted as a at the la	monito	oring See m	well; with 2" onitoring	Logged By:	iegel		ed By: J Brieg el
T	Sa		ples		Field A	nalysis	L	og				i o	
(feet)	Number	l ype	Drilling	Time	PID (ppm) S/B*	FID (ppm) S/B*	Graphic Symbol	SOSO		ologic Description		Well Construction Diagram	Remarks
5			7 1	518 5525	0/0	LL CONTRACTOR OF THE PROPERTY		SP CL SP	Artificial fill; dark to gravel as to SAND; light brown medium, we medium, we medium to light brown; l	osoil. to orange brown modell-sorted quartz sand wn to brown. wn. minor silt and sand	ottled; fine to	74 47	HNu readings taken in headspace jars. Wet at about 9 feet.



Project Name: M	ANG, Alpena C	RTC - A	lpena	a, MI	Client	: HAZWRAF	P
Project Number: _	931800		Nan	ne of Borehole or	Well:LF6	MW5	Sheet <u>1</u> of <u>1</u>
Borehole Location:	Site 6				Elevation and D	Patum (ft): Groun	ind: of Casing:
Drilling Agency:	Stearns	D	riller:	D. Giffels	Date Started:	8/11/93	Date Completed: 8/11/93
Drilling Equipment:	CME 750				Total: Depth (ft)	20	Depth to Bedrock (ft): NA
Method of Drilling:	Hollow Stem Au	ugers			Number of Samples: NA	Dist.: NA	Undist.: NA Core: NA
Borehole Size (inches):	8.25"				Water Depth: (ft bgs)	15.0	Water Depth Elev.(ft):
Completion Information casing. See monit	Completed as a coring well contru	monitor	ring v	well; with 2"	Logged By:	riegel	Checked By: J Briegel
Samples	Field Analysis	Lo	og				6
Depth (feet) Number Type Blow Count Orilling	PID (ppm) S/B* FID (ppm) S/B*	Graphic Symbol	SOSO	Lithol	ogic Descripti	on	Construction Diagram Bemarks
14 1702 1709 1716 10 — 1716	0/0		SP SC/CL	Topsoil; dark brown; depth of 6". SAND; orange brown well-sorted, quell-sorted, quell	; medium grained n to brown; mediu nartz sand; loose.	m to coarse,	Field screen sample only. Field screen sample not analyzed. Duplicate sample collected.



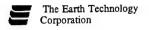
roje	ct N	um	ber	:	931800			Nan	e of Borehole or	Well:LF6	MW6		Sheet 1 of
	ole L				Site 6					Elevation and D	atum (ft): Grou	nd: of Casing:	
Drilli	ng Ag	enc	 y:		Stearns		D	riller:	D. Giffels	Date Started:	8/14/93		Completed: 8/14/93
	ng Eq	_		; (CME 75	0				Total: Depth (ft)	42	Depth Bedro	to ck (ft): NA
	od of				Hollow S	Stem Au	gers	-		Number of Samples: NA	Dist.: NA	Undis	t.: NA Core: NA
	ole S				8.25"					Water Depth: (ft bgs)	14.0	Water	Depth Elev.(ft):
					Comple	eted as a	monito	ring	well: with 2"	Logged By:		Check	ed By:
cas	ing.	Se	e m	onito	ring wel	l contru	ction lo	g.	well; with 2"	D Jayne/	J Briegel		J Briegel
	S	Sam	ple	s	Field A	nalysis	L	og		_1		F	
ŧŧ							U_					lct i	
Depth (feet)	Number	adń	Co Co	illing Time	(ppm) S/B*	(ppm) S/B*	Graphic Symbol	SOSA	₩ +,1	logia Daganinii	o n	Wel struc	Remarks
	Num	5	Blow Count	무 :: ::	PID	FID	Syl	ň	Litho	logic Descripti	UII	Well Construction Diagram	Kemarks
	_	\vdash	8		<u> </u>	ш.			_				
_	1								SAND; light brown;	medium grained.		AHTHAHAHAHAHAHAHAHAHAHAHA **	
=									-				
_		Date of the last	8	1410					F				
5 —	1	Wildling.	٥	1410					Same as above.				
_]	Marie 1						SP	F				n
5													
=	1								E				
10 -	-	HAMILY	11	1415					Same as above.				
10 -		THE STATE OF							Same as above.				i i
-									Ē			**	7
=	1								E				
-	}	A HATTA	9	1420				CL	SANDY CLAY.				Wet at about 14'.
15 -	1	HAMANA	-						CLAYEY SAND; r	noist			T.
:	1	-							E SAILD, I	10101			# #
]								F				T
	1							SC	F			3Φ Φ	T.
20 -	7								Same as above.				
	}								-				-
	_								F				3
									E				A
25]								Sama as ab				
25 -]								Same as above.				
	#							SC					
	=								E				
	7								<u> </u>				



Project Name: MI ANG, Alpena CRTC - Alpena, MI Client: HAZWRAP

Project Number: 931800 Name of Borehole or Well: LF6MW6 Sheet 2 of 2

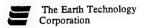
	S	an	ıple	es	Field A	nalysis	I	љg		6	
Depth (feet)	Number	Type	Blow Count	Orilling Time	PID (ppm) S/B*	FID (ppm) S/B*	Graphic Symbol	SOSN	Lithologic Description	Well Construction Diagram	Remarks
35 - 40 - 50 - 65 - 65 - 65 - 65 - 65 - 65 - 6			81	1445 1450 1502	0/0			SC CL	CLAYEY SAND; same as above. Grading to SILTY CLAYEY SAND; with fines up to 20%; with some angular, fossiliferous limestone and shale RF and gravel; mostly fine to medium grained sand. CLAY; grey; stiff to moderately stiff; with limestone/shale RF and gravel.		Well TD is 33'. Very resistant gravelly/bouldery zone. Borehole backfilled with Hole Plug from 42' to 34'. TD = 42'.
70											



Project Name: MI ANG, Alpena CRTC - Alpena, MI Client: HAZWRAP LF6MW7 Sheet 1 of 1 Name of Borehole or Well: 931800 **Project Number:** Ground: Elevation and Datum (ft): Site 6 Borehole Location: Top of Casing: 8/15/93 D. Giffels Date Started: 8/15/93 Date Completed: Driller: Stearns Drilling Agency: Depth to Bedrock (ft): NA Total: 18 **CME 750** Drilling Equipment: Depth (ft) Number of Samples: NA Undist.: NA Core: NA Dist.: NA **Hollow Stem Augers** Method of Drilling: Water Depth: 8.7 Water Depth Elev.(ft): 8.25" Borehole Size (inches): (ft bgs) Logged By: Checked By: Completion Information: Completed as monitoring well; with 2" casing. Pulled and grouted 10 Sept 93. See monitoring well D Jayne J Briegel contruction log Well Construction Diagram Field Analysis Log Samples Depth (feet) (ppm) S/B* Drilling Time ow Count (ppm) Number SSS Type Lithologic Description Remarks တ် PIO FI <u>—</u> Tield screen only. Artificial fill; dark brown; sandy topsoil. 0/0 AF 1655 _ 8 SAND; light brown; medium grained. SP Grading to orange brown; to moist. 1702 .1/0 10 Wet at about 8.7'. 1707 SANDY CLAY; moist. CL1710 CLAY; with some sand; medium stiff. CH 1713 SP SAND; very coarse grained. CH CLAY; medium stiff. 1718 0.0 SANDY CLAY. Shelby Tube sample at -CLAY; medium stiff; high plasticity. CH 17'-18'. 1734 TD = 18'.



Project Name: MI ANG, Alpena CRTC - Alpena, MI Client: HAZWRAP LF6MW8 Project Number: _ 931800 Sheet 1 of 1 Name of Borehole or Well: Ground: Borehole Location: Site 6 Elevation and Datum (ft): Top of Casing: Stearns D. Giffels 8/27/93 8/27/93 Drilling Agency: Driller: Date Started: Date Completed: Total: Depth (ft) Depth to Bedrock (ft): NA **CME 750** 15 Drilling Equipment: Number of Method of Drilling: **Hollow Stem Augers** Dist.: NA Undist.: NA Core: NA Samples: NA 8.25" Water Depth: Borehole Size (inches): 9.0 Water Depth Elev.(ft): (ft bgs) Logged By: Checked By: Completion Information: Completed as a monitoring well; with 2" casing. See monitoring well contruction log. J Briegel/M Stoker J Briegel Well Construction Diagram Field Analysis Samples Log ow Count Drilling Time PID (ppm) S/B* D (ppm) S/B* Number SSS Lithologic Description Remarks Sample used for field screen only. 1530 SAND; orange brown; medium grained. Same as above. 1534 6 1539 85/0 Same as above. Wet at about 9'. -CLAY; dark grey; medium stiff. Strong fuel odors noted. CH 1542 __ _SANDY CLAY. -CLAY; medium stiff. 1546 -SAND SP FCLAY. CH 15 TD = 15'. Drove hydropunch for water sample from 15'-17'. 20 25



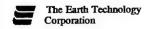
Project Name: MI ANG, Alpena CRTC - Alpena, MI Client: HAZWRAP LF6MW9 Sheet $\underline{1}$ of $\underline{1}$ Name of Borehole or Well: 931800 Project Number: Ground: Elevation and Datum (ft): Site 6 Borehole Location: Top of Casing: 8/27/93 8/27/93 Date Completed: D. Giffels Date Started: Driller: Stearns Drilling Agency: Depth to Bedrock (ft): NA Total: Depth (ft) 14 **CME 750** Drilling Equipment: Number of Dist.: NA Undist.: NA Core: NA **Hollow Stem Augers** Method of Drilling: Samples: NA Water Depth: Water Depth Elev.(ft): 8.25" Borehole Size (inches): Checked By: Completion Information: Completed as a monitoring well; with 2" casing. See monitoring well contruction log. Logged By: J Briegel M Stoker Well Construction Diagram Field Analysis Log Samples FID (ppm) S/B* Count Drilling Time (ppm) Number SSS Type Remarks Lithologic Description 30 တ် PID Topsoil; sand with organic matter (roots, etc.) to a 1650 0/0 depth of 4". SAND; orange brown; fine grained, poorly-graded sand; moist. 0/0 13 1654 SAND; greyish brown; mostly fine sand; moist. 1659 0/0 Grading to yellowish brown to greyish brown; with thin, clayey lenses. 1705 0/0 -CLAY/SILTY CLAY; grey; plastic; moist. TD = 14'. Drove hydropunch to 17' and sampled. 20



Project Name: M	I ANG, Alpena CR	TC - Alpena	a, MI	Client:	HAZWRAF	•	
Project Number: _	931800	Nan	ne of Borehole or V	Well:LF6M	W10		Sheet 1 of 1
Borehole Location:	Site 6			Elevation and Da	tum (ft): Groun	nd: of Casing	:
Drilling Agency:	Stearns	Driller:	D. Giffels	Date Started:	9/12/93	Date (Completed: 9/12/93
Drilling Equipment:	CME 750			Total: Depth (ft)	13	Depth Bedro	to ck (ft): NA
Method of Drilling:	Hollow Stem Aug	gers		Number of Samples: NA	Dist.: NA	Undis	t.: NA Core: NA
Borehole Size (inches):	8.25"			Water Depth: (ft bgs)	9.0	Water	Depth Elev.(ft):
Completion Information casing. See moni	: Completed as a r toring well contruct	monitoring v tion log.	well; with 2"	Logged By: D Jayne/J	Briegel		ed By: P Lay
Samples	Field Analysis	Log		1		.e	
Depth (feet) Number Type Blow Count	PID (ppm) S/B* FID (ppm) S/B*	Graphic Symbol USCS	Lithol	ogic Description	n	Well Construction Diagram	Remarks
1139		*** *** *** *** *** *** *** *** *** *** *** *** ** *** *** *** *** *** *** *** *** *** *** *** *** ** *** *** *** *** *** *** *** *** *** *** *** *** ** *** *** **	Artificial fill; GRAVE		ic-rich		Wet at 9 feet. TD = 13'; possibly augered down to boulders or bedrock refusal. Collected P6TW10 with hydropunch from 10' to 13'.



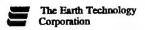
Project Name: MI ANG, Alpena CRTC - Alpena, MI Client: HAZWRAP HN8SB2 Sheet 1 of 3931800 Name of Borehole or Well: **Project Number:** Ground: Elevation and Datum (ft): Site 8 Borehole Location: Top of Casing: 8/13/93 D. Giffels 8/13/93 Date Completed: Date Started: Driller: Drilling Agency: Stearns Depth to Bedrock (ft): NA Total: 59 59.0 **CME 750** Drilling Equipment: Depth (ft) Number of Undist.: NA Core: NA **Hollow Stem Augers** Dist.: NA Method of Drilling: Samples: Water Depth 11.5 8.25" Water Depth Elev. (ft): Borehole Size (inches): (ft bgs): Checked By: Logged By: Completion Information: Borehole grouted to surface with cement/bentonite slurry. P Lay J Briegel Field Analysis Samples Log Count Drilling Time PID (ppm) FID (ppm) S/1/B* Number S/J/B* Type nscs Lithologic Description Remarks MO Concrete pavement 8" thick. 0930 0/0 26 -Artificial fill; gravel with sand to 3'. AF -SAND; brown; medium to coarse grained, quartz/RF sand; loose; slightly moist. 0/0 0939 25 SP Grading to light brown with brown. 24 0948 0/0 1002 0/0 Wet at 11.5'. Grading to light brown to greyish brown; with a thin gravel layer 12'-12.5'. Augered from 13' to 54' without recording lithology. SP



Project Name: MI ANG, Alpena CRTC - Alpena, MI Client: HAZWRAP

Project Number: 931800 Name of Borehole or Well: HN8SB2 Sheet 2 of 3

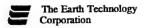
	1 6	1	. 1 .		E' 11 A	1	7		te of Borenoie of Well.	Sheet Z of S
	3	Sam	ple	S	Field A		Lo	3		
Depth (feet)	Number	Type	Blow Count	Drilling S	PID (ppm) S/J/B*	FID (PPM)	Graphic Symbol	SOSN	Lithologic Description	Remarks
30 —								SP SP		



Project Name: MI ANG, Alpena CRTC - Alpena, MI Client: HAZWRAP

Project Number: 931800 Name of Borehole or Well: HN8SB2 Sheet 3 of 3

	S	San	ıple	es	Field	Analysis	Lo	g		
Depth (feet)	Number	Type	Blow Count	Drilling Time	PID (ppm) S/J/B*	FID (ppm)	Graphic Symbol	SOSO	Lithologic Description	Remarks
550 — — — — — — — — — — — — — — — — — —			41		1/0 0/0 .3/0			SP GW SP	SAND; light brown to greyish brown; with gravel; no odor; wet. GRAVEL; angular limestone RF and gravel; with sand; wet. SAND; poorly graded.	Possibly had sluff material in sampler. TD = 59'; auger refusal at the top of the limestone bedrock.



Project Name: MI ANG, Alpena CRTC - Alpena, MI Client: HAZWRAP HN8SB3 Sheet 1 of 1 931800 Name of Borehole or Well: Project Number: Ground: Site 8 Elevation and Datum (ft): Borehole Location: Top of Casing: 8/13/93 D. Giffels Date Started: 8/13/93 Date Completed: Stearns Driller: Drilling Agency: Total: Depth (ft) Depth to Bedrock (ft): NA 11.0 **CME 750** Drilling Equipment: Number of Core: NA Dist.: NA Undist.: NA **Hollow Stem Augers** Method of Drilling: Samples: Water Depth (ft bgs): Water Depth Elev. (ft): 8.25" Borehole Size (inches): Checked By: Logged By: Completion Information: Borehole was grouted to surface with cement/bentonite. D Jayne P Lay Field Analysis Samples Log Type Iow Count (mdd) (mdd) S/J/B* Number S/J/B* Lithologic Description Remarks FID PID Concrete pavement 8" thick, underlain by a gravel base. 1410 .9/0 SAND; light brown; medium grained sand. 30 1415 .9/0 Same as above. SP .7/0 81 1430 10 Grading to light grey. Did not drill to water. TD = 11'. 15



roje	ct Nı	um	ber	:9	31800				Nam	e of Borehole o	r Well: HN8	SB4	Sheet 1 of _
	ole Lo				Site 8						Elevation and D	atum (ft): Groun	d: f Casing:
—— Orillir	ng Ag	enc	y:	5	Stearns			Г	riller:	D. Giffels	Date Started:	8/13/93	Date Completed: 8/13/93
	rilling Equipment: CME 750										Total: Depth (ft)	14.0	Depth to Bedrock (ft): NA
Metho	d of I	Dril	ling:	I	Hollow	Stem	Au	igers			Number of Samples:	Dist.: NA	Undist.: NA Core: NA
					3.25"						Water Depth (ft bgs):	13.8	Water Depth Elev. (ft):
Borehole Size (inches): 8.25" Completion Information: Borehole was grouted to surface with cement/bentonite.										face with	Logged By:	аупе	Checked By: P Lay
			ple	s	Field A	naly	sis	Lo	g		, , , , , , , , , , , , , , , , , , , ,		
(feet)	Number	Type	low Count	Drilling Time	PID (ppm) S/J/B*	FID (ppm)	S/1/B*	Graphic Symbol	SOSA		hologic Descript		Remarks
5			27		1.3/0				SP				Water at about 13.8'. TD = 14'.
15 -										- - - - - - - - - -			



Project Name: MI ANG, Alpena CRTC - Alpena, MI Client: HAZWRAP HN8SB5 931800 Sheet <u>1</u> of <u>1</u> **Project Number:** Name of Borehole or Well: Ground: Borehole Location: Site 8 Elevation and Datum (ft): Top of Casing: Drilling Agency: Stearns Driller: D. Giffels 8/13/93 Date Completed: 8/13/93 Date Started: Depth to Bedrock (ft): NA Total: Drilling Equipment: **CME 750** 11.0 Depth (ft) Number of **Hollow Stem Augers** Method of Drilling: Dist.: NA Undist.: NA Core: NA Samples: Water Depth (ft bgs): 8.25" Borehole Size (inches): Water Depth Elev. (ft): Logged By: Checked By: Completion Information: Borehole was grouted to surface with cement/bentonite. D Jayne P Lav Samples Field Analysis Log ow Count PID (ppm) FID (ppm) Number S/J/B* S/1/B* **NSCS** Lithologic Description Remarks 18 Concrete; pavement 8" thick, underlain by gravel AF 52 1645 Large cobble plugged the SAND; light brown; medium grained sand. sampler; no sample caught. SP 21 1650 0/0 Same as above. SP 1700 35 Collected MS/MSD sample for 10 Same as above, but moist. TD = 11'. 15



Project Name: MI ANG, Alpena CRTC - Alpena, MI Client: HAZWRAP HN8SB6 Sheet $\underline{1}$ of $\underline{1}$ Name of Borehole or Well: 931800 **Project Number:** Ground: Elevation and Datum (ft): Top of Casing: Site 8 Borehole Location: 8/15/93 8/15/93 Date Completed: D. Giffels Date Started: Driller: Stearns Drilling Agency: Depth to Bedrock (ft): NA Total: 14.0 **CME 750** Depth (ft) Drilling Equipment: Number of Undist.: NA Core: NA Dist.: NA Hollow Stem Augers Samples: Method of Drilling: Water Depth Water Depth Elev. (ft): NA 8.25" (ft bgs): Borehole Size (inches): Checked By: Logged By: Completion Information: Borehole was grouted to surface with P Lay cement/bentonite. J Briegel Log Field Analysis Samples Depth (feet) ow Count Drilling Time PID (ppm) FID (ppm) S/1/B* SSSN Number Remarks Lithologic Description Grassy area at surface. Artificial fill; dark grey; gravelly sand with roots; to a 0/0 0844 depth of 2'. SAND; light brown to brown; medium to coarse, quartz sand; with trace of gravel; loose; slightly SP 0/0 0849 30 Same as above. .1/0 0856 36 Same as above, but light brown. 10 SP No odors detected in sampling. 0903 0/0 59 SAND; light brown; fine to medium grained quartz sand; with trace of fine gravel; slightly moist. No water at bottom of borehole. TD = 14. 15



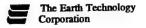
Project Name: MI ANG, Alpena CRTC - Alpena, MI Client: HAZWRAP 931800 HN8SB7 Sheet 1 of 1 Project Number: Name of Borehole or Well: Ground: Borehole Location: Site 8 Elevation and Datum (ft): Top of Casing: Stearns D. Giffels 8/15/93 Driller: 8/15/93 Drilling Agency: Date Started: Date Completed: Total: Depth (ft) Depth to Bedrock (ft): NA **CME 750** Drilling Equipment: 14.0 Number of **Hollow Stem Augers** Method of Drilling: Dist.: NA Undist.: NA Core: NA Samples: Water Depth 8.25" Borehole Size (inches): 13.0 Water Depth Elev. (ft): (ft bgs): Logged By: Checked By: Completion Information: Borehole was grouted to surface with cement/bentonite. D Jayne P Lay Field Analysis Samples Log Type Iow Count Drilling Time (mdd) FID (ppm) S/J/B* Number S/1/B* **NSCS** Lithologic Description Remarks PIO 0930 Artificial fill; brown; organic-rich topsoil. No field screen. -SAND; orange brown; medium grained quartz-rich sand. SP 21 0933 0/0 Grading to light brown. Field screen (PO8SB7B). 0938 0/0 Field screen (PO8SB7C). 10 Same as above. SP 0946 0/0 Field screen (PO8SB7D). Water came up to about 13'. Grading to with trace of gravel; saturated. TD = 14'. 15



Project Name: MI ANG, Alpena CRTC - Alpena, MI Client: HAZWRAP HN8SB8 Sheet 1 of 1 Name of Borehole or Well: _ Project Number: 931800 Ground: Elevation and Datum (ft): Top of Casing: Site 8 Borehole Location: 8/17/93 8/17/93 Date Completed: D. Giffels Date Started: Driller: Stearns Drilling Agency: Depth to Bedrock (ft): NA Total: Depth (ft) 11.0 **CME 750** Drilling Equipment: Number of Undist.: NA Core: NA Dist.: NA **Hollow Stem Augers** Samples: Method of Drilling: Water Depth Water Depth Elev. (ft): NA (ft bgs): Borehole Size (inches): Checked By: Logged By: Completion Information: Borehole was grouted to surface with P Lay cement/bentonite slurry. J Briegel Log Field Analysis Samples Type Iow Count Drilling Time (mdd) FID (ppm) S/1/B* S/1/B* nscs Number Remarks Lithologic Description PID Concrete 8" thick at the surface; underlain by gravel ΑF and sand to 2.5'. 0/0 26 0849 SAND; orange brown to brown; medium to coarse SP grained quartz sand; well-sorted. 0853 0/0 Grading to light brown to greyish brown; to with fine gravel; loose; moist. No fuel odors detected. SP 0904 0/0 Thin layer of fine grained gravel from 10'-10.5'. Grading to greyish brown. 10 TD = 11'; not to water table.



Project Name: _N	II ANG, Alpena C	CRTC - Alper	na, MI	Client: HAZWRAI	D			
Project Number:	931800	Na	me of Borehole or '	Well: HN8MW5	Sheet <u>1</u> of <u>1</u>			
Borehole Location:	Site 8			Elevation and Datum (ft): Ground: 9999.99' Top of Casing:				
Drilling Agency:	Stearns	Driller	: D. Giffels	Date Started: 9/11/93	Date Completed: 9/11/93			
Drilling Equipment:	CME 750			Total: 20 Depth (ft)	Depth to Bedrock (ft): NA			
Method of Drilling:	Hollow Stem A	ugers		Number of Samples: NA Dist.: NA	Undist.: NA Core: NA			
Borehole Size (inches)	: 8.25 "			Water Depth: 12.8 (ft bgs)	Water Depth Elev.(ft):			
Completion Information casing. See mon	on: Completed as itoring well constr	a monitoring uction log.	well; with 2"	Logged By: J Briegel	Checked By: P Lay			
Samples	Field Analysis	Log			E			
Depth (feet) Number Type Blow Count Drilling	FID (ppm) S/B* FID (ppm) S/B*	Graphic Symbol USCS	Lithol	ogic Description	Construction Diagram Uniagram Skemarks			
38 162 10 — 38 162	25 0/0	SP SP	SAND; greyish brown Same as above. SAND; brown; mediu	in to brown.	Wet at 12.8'; measured down augers centerhole.			



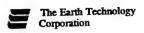
Project Name: MI ANG, Alpena CRTC - Alpena, MI Client: HAZWRAP RT9SB13 Sheet $\underline{1}$ of $\underline{3}$ Name of Borehole or Well: _ 931800 Project Number: Elevation and Datum (ft): Site 9 Top of Casing: Borehole Location: 8/29/93 8/29/93 Date Completed: D. Giffels Date Started: Driller: Stearns Drilling Agency: Depth to Bedrock (ft): NA Total: Depth (ft) 61.0 **CME 750** Drilling Equipment: Number of Dist.: NA Undist.: NA Core: NA **Hollow Stem Augers** Method of Drilling: Samples: Water Depth 16.0 Water Depth Elev. (ft): 8.25" Borehole Size (inches): (ft bgs): Checked By: Logged By: Completion Information: Grouted to surface with cement/bentonite slurry after drilling completed. P Lay D Jayne Samples **Field Analysis** Log Type Blow Count Drilling Time FID (ppm) (mdd) S/J/B* S/J/B* Number SSS Remarks Lithologic Description PID SAND; light brown; medium grained. 0834 0/0 Field screen only. SP Same as above. 0838 0/0 Same as above. 0841 0/0 27 Same as above. SP Water level at 16'.



Project Name: MI ANG, Alpena CRTC - Alpena, MI Client: HAZWRAP

Project Number: 931800 Name of Borehole or Well: RT9SB13 Sheet 2 of 3

	Samples		Fie	ld A	nalysis	Log					
Depth (feet)	Number	Type	Blow Count	Drilling Time	PID (ppm)	S/1/B*	FID (ppm)	Graphic Symbol	SOSN	Lithologic Description	Remarks
25 —									SP	SAND; same as above. Same as above.	
30 —										SAND; light brown; medium grained sand.	
35 —									SP	Same as above.	
40										Same as above.	-
45 —		arti	25	0904	0/0)			SP	Same as above.	

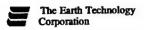


Project Name: MI ANG, Alpena CRTC - Alpena, MI Client: HAZWRAP

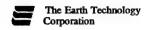
Project Number: 931800 Field Analysis								Nam	e of Borehole or Well: RT9SB13	Sheet <u>3</u> of <u>3</u>
	Samples Field Analysis						Log	;		
Depth (feet)	Number	" Type	Blow Count	Orilling Time	PID (ppm) S/J/B*	FID (ppm)	Graphic Symbol	SOSO	Lithologic Description	Remarks
50		IIMIIMIIMIIMIIMI	54 40 90 61 102	0948	0/0			SP	SANDY CLAY. SAND; light brown; medium grained sand; with trace of clay. Grading to coarser-grained. SAND; same as above. Same as above. SAND; coarse to very coarse grained. CLAY; grey; with sand and dark grey RF (calcareous shale).	No hydrocarbon odors on any samples yet. Clay and rock on tip of sampler; may be close to bedrock contact. TD = 61'.



Project Name: MI ANG, Alpena CRTC - Alpena, MI Client: HAZWRAP RT9MW6 Sheet <u>1</u> of <u>1</u> **Project Number:** 931800 Name of Borehole or Well: Ground: Site 9 Elevation and Datum (ft): Borehole Location: Top of Casing: D. Giffels 8/30/93 8/30/93 Date Completed: Stearns Driller: Date Started: Drilling Agency: Total: Depth (ft) Depth to Bedrock (ft): NA 23 **CME 750** Drilling Equipment: Number of Samples: NA **Hollow Stem Augers** Dist.: NA Undist.: NA Core: NA Method of Drilling: Water Depth: 15.0 8.25" Water Depth Elev.(ft): Borehole Size (inches): (ft bgs) Checked By: Logged By: Completion Information: Completed as a flush-mounted monitoring well; with 2" casing. See monitoring well D Jayne P Lay contruction log. Well Construction Diagram Field Analysis Samples Log Depth (feet) Count D (ppm) S/B* PID (ppm) S/B* Number Type nscs 30 Remarks Lithologic Description FID Grassy at the surface. Artificial fill; topsoil with grass roots. -SAND; light brown; medium grained sand; with trace of fine, subangular gravel; no fuel odor; slightly moist to dry. 5 0808 0/0 SP Same as above. 16 0813 0/0 10 SAND; light greyish brown; fine to medium grained; with trace of subrounded quartzose gravel; slightly moist to dry. SP 34 0817 0/0 15 Same as above. Wet at 15.3' 20 Same as above. SP TD = 23. 25



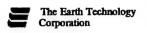
roje	oject Number: 931800 Name of Borehole										Nan	e of Borehole or	Well: RT9	TW7	r Well: Sheet _1 of					
	orehole Location: Site 9												Elevation and Datum (ft): Ground: Top of Casing:							
Drilli	rilling Agency: Stearns Driller: D. Giffels										Driller:	D. Giffels	Date Started:	9/10/91		10/93				
Drilli	ng Eq	quip	men	t:	C	MI	E 75	0					Total: 28.0 Depth (ft)		Depth to Bedrock (ft): NA					
Metho	od of	Dr	illing	 ;:	H	loll	ow i	Sten	ı Au	igers			Number of Samples:	Dist.: NA	Undist.: NA Core:	NA				
Borehole Size (inches): 8.25"													Water Depth (ft bgs):	20.0	Water Depth Elev. (ft):					
Completion Information: Temporary well, which was grouted to the surface after sampling completed. See well contruction log.									wel ed. S	l, which See well	n was contr	grouted to the uction log.	Logged By:	riegel	Checked By: P Lay					
-	S	Sar	npl	es	T	Fie	ld A	nal	ysis	Lo	g									
Depth (feet)	Number	Type	Blow Count	Drilling		PID (ppm)	S/1/B*	FID (ppm)	S/1/B*	Graphic Symbol	SOSO	Lith	ologic Descript	ion	Remarks					
5 —											SP	SAND. SAND. SAND. SAND. SAND.			No split spoon samples ta	ken.				
-												-			Drove hydropunch samp					



Project Name: MI ANG, Alpena CRTC - Alpena, MI Client: HAZWRAP

Project Number: 931800 Name of Borehole or Well: RT9TW7 Sheet 2 of 2

				T:			nolveic	To		le of Borenoie or Well:	Sheet <u>Z</u> of <u>Z</u>
د∵ا	- 8	all	nple +	1			nalysis		5		
Depth (feet)	Number	Type	Blow Count	Drilling Time	PID (ppm)	S/J/B*	FID (ppm)	Graphic Symbol	SOSN	Lithologic Description	Remarks
25 —									SP	SAND.	Collected hydropunch water sample (P9TW7AW) at 21'.
00,	4										TD = 28'; collected hydropunch water sample (P9TW7BW) at 31'.
5 —											
0 —											
5 —											



roje	ct N	un	ıbeı	r:	93	318	00				Nan	ne of Borehole or	Well: RT9	TW8	Sheet _	1_ of _1		
Borehole Location: Site 9													Elevation and Datum (ft): Ground: Top of Casing:					
Drilli	orilling Agency: Stearns Driller: D. Giffels								1	Driller:	D. Giffels	Date Started:	9/9/93	Date Completed:	9/9/93			
Drilling Equipment: CME 750											Total: Depth (ft)	19.0	Depth to Bedrock (ft): NA					
Metho	od of	Dri	lling	:	Н	oll	ow	Sten	ı Aı	igers			Number of Samples:	Dist.: NA	Undist.: NA	Core: NA		
Borehole Size (inches): 8.25"									Water Depth (ft bgs):	7.0	Water Depth Elev.	(ft):						
Comp casi mo	letion ng; niton	n In pu rin	form	ation: and ell co	gr nt	Ten ou ruc	npo ted	rary afte n log	mo r sa	nitorin mpling	g well comp	with 2" lete. See	Logged By:	ayne	Checked By: P La	y		
	S	San	ıple	s]	Fie	ld A	anal	ysis	Lo	g							
Depth (feet)	Number	Type	Blow Count	Drilling Time		PID (ppm)	S/1/B*	FID (ppm)		Graphic Symbol	SOSN	Lith	ologic Descrip	tion	Remark	KS		
5				1404							SP	SAND; reddish bro		d.	Water came up to Tried to get water sa hydropunch at 8'; bu Hydropunch sample 9'. Hydropunch sample (and duplicate) colle	mple with at no water. P5TW9AW		

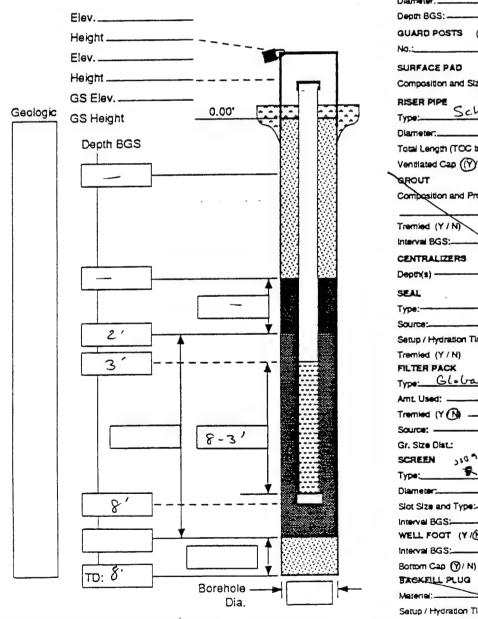
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Monitoring Well Construction Forms

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Project Name: Phelps Collins ANG	Project Number: 93/800	Date: 9/21/93
Well SIPZI	Well ID: SIPZI	Sheetot
Driller: D. Giffels	Borenole Diameter (In): 8/4" O.D.	Total Depth 8/
Drilling Agency: Stearns	Date Started: 8/23/93	Depth to Water (ft): ~ 2
Drilling Equipment CME 750	Date Finished: 9/12/93	Elevation and Datum:
Drilling Method: Hollow Stem Auger	Logged by: JSBnegel	Checked by: JSB
Drilling Fluid: None	Number of Samples:	Date:



PROTECTIVE CSQ
Material / Type:
Diameter: 25g
Diameter: 36 Depth BGS: 7/2 Weep Hole (Y / N)
GUARD POSTS (Y/N)
No.:Type:
SURFACE PAD
Composition and Size:
RISER PIPE
Type: Schedule 40 PVC
Diameter: 2"
Total Length (TOC to TOS): 3' - 0'
Total Cargar (TOC to TOS).
Ventilated Cap (N) .
GROUT
Composition and Proportions:
-
Tremled (Y/N)
Interval BGS:
CENTRALIZERS 753
Depth(s)
Depth(s) SEAL Type:
Type:
Source:
Setup / Hydration Time:
Tremled (Y / N)
FILTER PACK
Type: Global #7
9 9 9 6 6
61.1-1 0.11.
333.4.
Gr. Size Dist:
SCREEN 350 9/10/93 Type: \$ Schedule 40 PVC
Type: Sales to 1.
Diameter
30.32.20.1
INTERVAL BGS
WELL FOOT (Y/M)
Interval BGS:Length
Bottom Cap (9/N)
Marenal: SEG 9721/32
Constitution Trans
Setup / Hydration Time: Form F-102
, Tremled (Y / N) 9/1/9

1

Monitoring Well Construction Log - Flush Mount

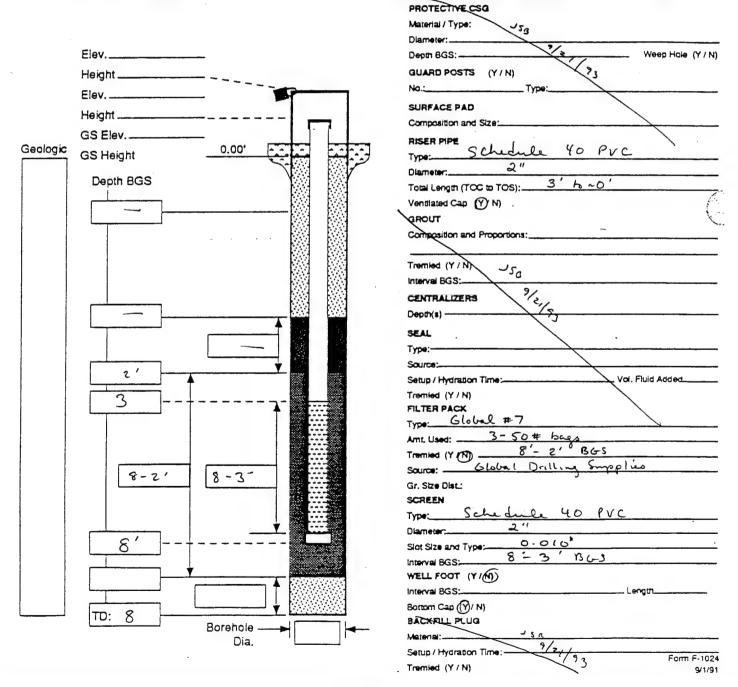
Project Name: Phelps Collins ANG	Project Number: 93/800	Date: 8 23 93
Well SIPZ2	WOULD: RSTPZZ	Sneet of
DALLOT. D. G. Ffels	Borenole Diameter (in): 0/4 0.0.	Total Depth
Drilling Assonor: Stearns	Date Started: 8/23/93	Depth to
Drilling Equipment CME 750	Daze Finished: 9/12/93	Elevation and Datum;
Disting Messod: Hollow Stem Auger	LOOKED PSTayne	Checked by: I Strange
Drilling Fluid: None	Number of Samples:	Date:
	PROTECTIVE CSG	

			Diameter: 753	
			Diameter: 7/3	_ Weep Hote (Y/N)
			Diameter: 7/2 Depth BGS: 7/2 GUARD POSTS (Y/N)	_ 11400/124 (1711)
	Elev.			
	Height	_	SURFACE PAD	
	GS Elev.		Composition and Size:	
		0.00	RISER PIPE	X ,
Geologic	GS Height	0.00'	Type: Schedule 40 PVC	,
1	Depth BGS Elev	v	Diameter,	
	Depth BC	S	Total Length (TOC to TOS).	
			Ventilated Cap (M) (N)	
1			-GROUT	
			Composition and Proportions:	
			Tremled (Y/N)	
		∤ ⊗∤ ⊗4	Interval BGS: VS	
			CENTRALEZERS 9/	
			Depth(s)	
			INIBOTAL BGS: CENTRALDERS Depty(s) SEAL	3
			Type:	
	 	+ 2 2	Source:	
	2'-		Setup / Hydrabort Fathe	Va. Fud Xooed
	3'		Tremied (Y / N)	
1	3 1	†	Type Global Drilling Supplie	•
1				·•
			7.112 U.A.S.	
			Tremled (Y/M) 8'-2' BGS; (olobal #7
	8-2'	8-3	Gr. Size Dist:	
			ECREEN .	
			Trans Schichile 40 PVC	
		▼	Diameter 24	
	8'		Siol Size and Type: 0,010"	
			Diameter 24 Siot Size and Type: 0,0/0" Interval BGS: 8'-3'	
			WELL FOOT (Y/M)	
		↑	Interval BGS:	Length
			BOTTOM Cap (Y) M	
L	J TD: 8	Parabala > [a]	BACKELL PLUG	
		Borehole 81/4"	Malerial: USB 1/21/9)
		Uia.	Setup / Hydration Time;	
			Tremed (Y / N)	Form F-102

1



Project Name: Phelps Collins ANG	Project Number: 93/800	Date: 9/21/13
Well SIPZ3	Well 10: 51 PZ3	Sheet i of I
Driller: D. G.f-fels	Borehole Diameter (in): 84" O.D.	Total Depth (ft): 8
Drilling Agency: Stearns	Date Started: 8/23/93	Depth to Water (ft): ~ 2 '
Drilling Equipment CME 750	Date Finished: 9/12/93	Elevation and Datum:
Drilling Method: Hollow Stem Auger	Logged by: 15 Brucel	Checked by: JSG
Drilling Fluid: None	Number of Samples:	Date:



Project Name: Phelips Collins ANG	Project Number: 931800	Date: 8/24/93
WHI SIMWI	WHI ID: SIMWI	Sheet _ l of _ t
Driver: D. Gr. Ffeli	Barehale Diameter (In): 8 1/4 " 0.6	Total Depth (ft): 40.5
Druing Agency: Stearns Brilling	Date Started: \$ 24/93	Depth to Water (ft): 3
Drilling Equipment CME 750	Daze Finished: をんだしくす	Elevation and Datum:
Draing Merrod: hollow stem auger	LOODER DY: ME Stoller	Chacked by: 15 Bregel
Drilling Fluid:	Number of Samples:	Date:

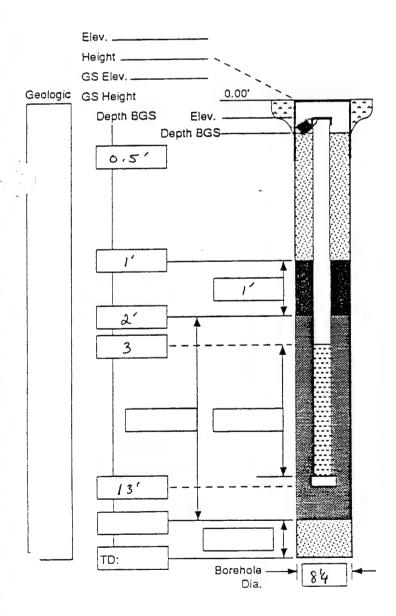
	Elev
	Height
	GS Elev.
Geologic	GS Height 0.00°
	Depth BGS Elev.
	Depth BGS———
	0.3
	3
	13
	38
	TD:40.2'
	Borenoia - SV. "
	Dia.

PROTECTIVE CSG
Material / Type:
Diameter: N/A
Depth BGS: Weep Hole (Y/N)
GUARD POSTS (Y (H))
No:Type:
SURFACE PAD Composition and Size: Concrete 2 × 2'
RISER PIPE Type: Schalule 40 PVC Diameter: 2"
Dispersion 2"
Total Length (TOC to TOS): ~ 3
Ventilated Cap (n)/N)
Composition and Proportions; cement (bentonite muchue
~ 13 - 1°
Tremled (Y (N) ~ (3 - ('
Internal BGS: ~ 13 - 1'
CENTRALIZERS
12 A
Depth(s)
Type: bentunite pellets source: Baron'd
Type: Barn'd
Source: 174018
Setup / Hydradon Time: Vol. Fluid Added 5 gal/17
Trembel (Y (B)
FILTER PACK
Type: Global Dilling Supplies #7 AMIL Used: 7-50 16 bags Tremled (YM) Source: Global dulling supplies
Amit Used:
Global drellar consider
Gr. She Dist:
Type: PVC Schedule 40 Diameter: 2"
Diameter 2 "
Sint Size and Tune:
hueral BGS: 3 - 13°
WELL FOOT (Y (M))
Interval BGS: Length
Bortom Cap (D/ M)
BACKFILL PLUO
Maioria: hole plus 40.5 - 38; Collapse 38 - 20
Setup / Hydration Time;

hole phy 20-15'



Project Number: 93/800	Date: 8/27/93
Well ID: SIMN2	Sheet 1 of 1
Borehole By 11 0, D.	Total Depth /3'
Date Started: 8/26/93	Depth to Water (ft): ~3
Date Finished: 8/27/93	Elevation and Datum:
Logged by: MES	Checked by: JSBnegel
Number of Samples: —	Date:
	Well ID: SIMW2 Borehole Diameter (In): 84"0,0. Date Started: 8/20/93 Date Finished: 8/27/93 Logged by: MES



PROTECTIVE CSQ
Material / Type: 556 7/21/53
Diameter:
Depth BGS: Weep Hole (Y / N)
GUARD POSTS (Y/N)
No.: Type:
SURFACE PAD
Composition and Size: Concrete 2 × 2
RISER PIPE
Type: Schedule 40 AVC
Dlameter: 2 "
Total Length (TOC to TOS): ~ 3'
Ventilated Cap (Y/N)
GROUT
Composition and Proportions: hole plug 1-6"
Tremled (Y (N)
Interval BGS:
CENTRALIZERS
Depth(s) N/A
SEAL 1 2' 1' 4'S
SEAL bentomte pellets 2-1' BGS
source Baroid
Setup / Hydration Time: Vol. Fluid Added & gall
Tremied (Y /(NI))
FILTER PACK
Type: Global Drilling Supplies #7
Amt Used: ~7 -50 # 600
Tremied (Y N) /3 - 2
Source: Global Drilling
Gr. Size Dist.:
SCREEN () () 0.46
Type: Schadule 40 PVC
Diameter 2"
Slot Size and Type:
Interval BGS: 3 - (3'
WELL FOOT (Y M)
Interval BGS:Length
Bottom Cap (Y) N)
BACKFILL PLUG
Material: NA
Setup / Hydration Time; / Form F-1023

9/1/91

Tremied (Y / N)

9		
Project Name: Phulps Collins ANG	Project Number: 931800	Date 8/27/73
Well SIMN3	WOILID: SLMW3	Sheetot/
Driller: D. G. Fiels	Barenale Diameter (In): 8/4 " 0. D.	Total Depth / (M): /3
Drilling Agency: Stearns	Dale Started: 8/27/95	Depth to Water (ft): ~3 '
Drilling Equipment CM & 750	Date Finished: 8/27/93	Elevation and Datum:
Drolling Method: Hollow Stem Augu	LOGOOD BY: DEJGY NE	Chacked by: J Someye
Drilling Fluid: None	Number of Samples: —	Date:
	PROTECTIVE CSQ	

JSB 9/21/93

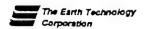
		•	Depth BGS: Weep Hole (Y/M)
			GUARD POSTS (Y)
	Elev		No: Type:
	Height		SURFACE PAD Composition and Size concrete 2' × 2'
	GS Elev.		
Geologic	GS Height 0.00'		Type: Scholale 40 PVC
	Depth BGS Elev.		a 11
	Depth BGS———	7	Total Length (TOC to TOS): 15 5 7 /2/13 ~3"
	<u></u> `		Ventilated Cap (D/ N)
	0.5'		GROUT
			Composition and Proportions: hole plug
			Tremled (Y (N)
			Internal BGS: ~ 1'-0.5'
			CENTRALIZERS/4
1			Depth(s)
	2 -1		Type: Hole plug - bentomte pellets 2-1' Source: Baroi'd
			same Baroi'd
1	2		Setup / Hydration Time:
	†		Tremled (Y (N)
	3'	Λ ⁻	THE TABLE !
			Type: Global Filter Puck #7 AMIL Used: 7-5016 bags
			ATTIL USAS: 7-50/6" bags
			Amil Used: 75018 Bays Tremled (Y/B) Global Dichling Supplies Gr. Stre Dist: 13'-2' 855
			Source: 6 6 bal Dielling Implies
	(3-2'; sd 3-13'		Gr. Ste Dist:
			SCREEN CALL OF MAN PICE
			Type School 40 PVC
			Diameter Dro AFS Z'
	/3'		Slot Size and Type: 0.0/0"
			Interval BGS: 13'-3'
-	7/24/11	T	WELL FOOT (Y 18) Interval BGS: Length
1	NIA	1 (************************************	Interval BGS: Length Length Length
	TD: 13	<u> </u>	BACKFILL PLUG
	Borehole —	814	Malerial: N/A
	Dia.		Setup / Hydration Time;

Tremied (Y / N)

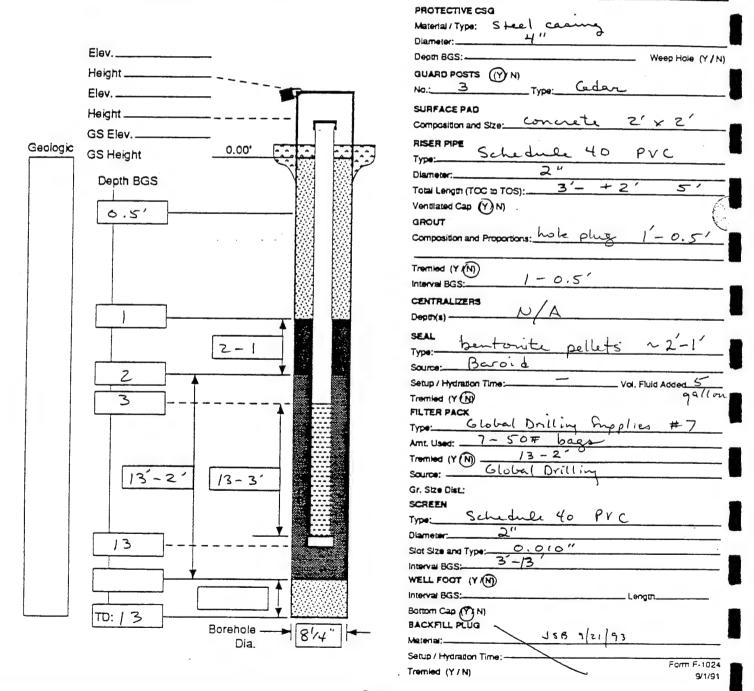
Form F-1025

Project Name: Phelos Collins	Project Number: 931800	Date: 08/27/93
well SIMW4	WOHID: SIMWY	Sheetof
Druier: O.G. Kels	Borehole Dismeter (In): 8 400	Total Depth (ft): /3
Drilling Agency: Steward	Date Started: 08/27 (93	Depth to Water (ft): ~3
Drilling Equipment CME 150	Date Finished: 08/27/93	Elevation and Dazum:
Drilling Method: + + 5	LOODER DY: M. Stoker	crocked by: 15 Bright
Drilling Fluid: None	Number of Samples;	Date:
	PROTECTIVE CSG	

Elev. Height GS Elev. Depth BGS Geologic GS Height Depth BGS Depth BGS Depth BGS Depth BGS Type: SURFACE PAD Composition and Size: Connete 2' x 2' RISER PIPE Type: Schedule 40 PVC Diameter: 2" Diameter: Diameter: O Tremied (Y (N)) GROUT Composition and Proportions: hole plus ~ 1'-0.5' Tremied (Y (N)) A Depth(S) Depth(S)
GUARD POSTS (Y/N) No:
Elev
Height GS Elev. Geologic GS Height Depth BGS Depth
Height GS Elev. Geologic GS Height Depth BGS Depth
GS Elev
Geologic GS Height Depth BGS De
Depth BGS Depth BGS Depth BGS Diameter: 2" Total Length (TOC to TOS): ~ 3' Ventilated Cap (YN) GROUT Composition and Proportions: hole plus ~ 1'-0.5' Interval BGS: CENTRALIZERS N/A
Total Length (TOC to TOS): Ventilated Cap (MN) GROUT Composition and Proportions: hole plug ~ 1'-0.5' Tremied (Y (N)) ~ 1'-0.5' Interval BGS: CENTRALIZERS N/A
Ventilated Cap (VN) GROUT Composition and Proportions: hole plug ~ 1'-0.5' Tremied (Y(N)) ~ 1'-0.5' Interval BGS: CENTRALIZERS N/A
Tremled (Y (N)) ~ 1'- 0.5' Interval BGS: CENTRALIZERS N/A
Tremled (Y (N) ~ ('- 0.5') Interval BGS: CENTRALIZERS N/A
Tremled (Y (N) ~ ('- 0.5') Interval BGS: CENTRALIZERS N/A
Interval BGS: ~ 1 - 5 .S
CENTRALIZERS N/A
NM NM N/A
Total (Marie Deoth(s)
SEAL bentonite pelleto ~2-1'
Basaid
Source: Darol B Source: Darol B Vol. Fluid Added 5 99 11 on
Tremied (Y (N)
Type: Global Dr. Iline Supplies #
Type: Global Drilling Supplies #7 Amil Used: 7-50# bongs 13-2'
Trembed (YM) Global Drilling
[3-2' 3-/3' Source: G(50-2 (57)(119)
S.: 52.52
SCREEN Sche dule 40 PVC
Type: Sche dule 40 PVC
Slot Size and Type: 0.0(0 "
Interval BGS: 3-13
WELL FOOT (Y M)
Interval BGS: Length
Bottom Cap (Y)M)
TD: 13 Borehole 8/4 BACKFILL PLUG Malerial:
Dia. Setup / Hydration Time: JSB 9/21/93
Tremed (Y/N) Form F-1025

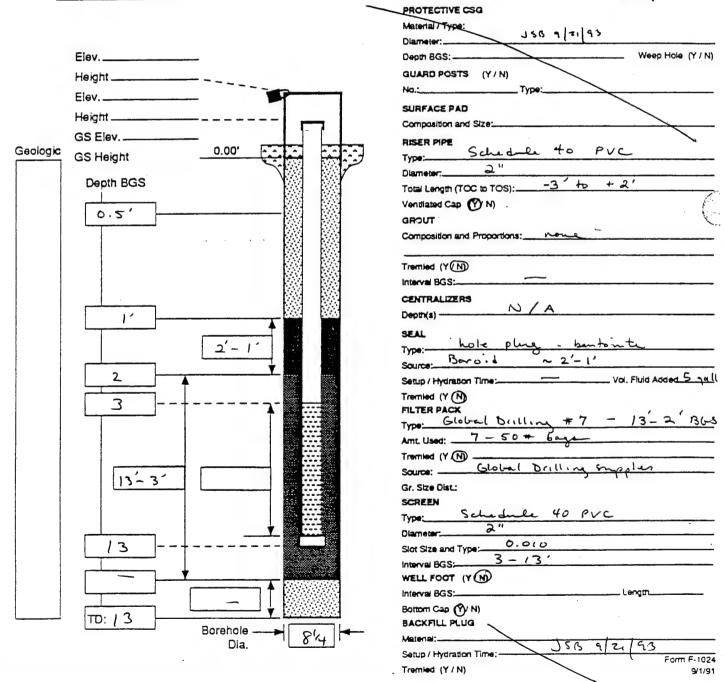


Project Name: Phelps Collins ANG	Project Number: 93/800	Date: 8/28/93
Well SIMWG	Well 10: Simwa	Sheetotl
Driller: D. G. Ffels	Borenole Diameter (In): 8/4" O.D.	Total Depth (m): /3
Drilling Agency: Stearns	Date Started: 8/28/93	Depth to Water (ft): ~ 3
Drilling Equipment CME 750	Date Finished! 8/28/93	Elevation and Datum:
Drilling Method: Hollow Stem Auger	Logged by: JSB 9/21/13	Checked by: 3 5 ß
Drilling Fluid: None	Number of Samples:	Date:





Project Name: Phelps Collas ANG	Project Number: 93/800	Date: 8/28/93
WHI SITW9 (SIMW9)	Well ID: SITW9	Sheet 1 of 1
Driller: D. Giffels	Borehole Diameter (in): 8/4 1 0.0	Total Depth (ft):
Drilling Agency: Stearns	Date Started:	Depth to Water (ft):
Drilling Equipment CME 750	Date Finished:	Elevation and Datum:
Drilling Method: Hollow Stem Auger	Logged by: JSB	Checked by PHCay
Drilling Fluid: None	Number of Samples:	Date: 4/2/93



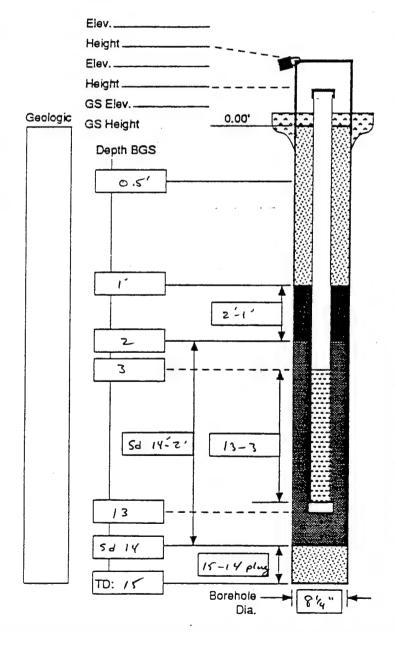


Project Name: Phelps Collins ANG	Project Number: 93/800	Date:
WHI SIMWIO (temporary well)	WHID: SIMWID	Sheetot
Driller: D. Giffels	Borenole Diameter (in): 8/4" O.D.	Total Depth
Drilling Agency: Stearns	Date Started: 8/29/93	Depth to Water (ft): ~ 3 ′
Drilling Equipment CME 750	Date Finished: 9/12/93	Elevation and
Drilling Method: Hollow Stem Auger	Logged by: JS Megel	Checked by: J S ß
Drilling Fluid: None	Number of Samples:	Date:

pull	ed 9/12/13		PROTECTIVE CSQ
1			Material / Type:
			Diameter:Sg
	Elev.	•	Depth BGS: Weep Hole (Y / N)
	Height		Diameter: Depth 8GS: GUARD POSTS (Y/N) No:
	Elev		No.:Type:
	Height		SURFACE PAD
	GS Elev.		Composition and Stze:
Geologic		0.00'	RISER PIPE
	GS Height		Type: Schedule 40 PVC
	Depth BGS	V V	Diameter:
			Total Length (TOC to TOS): - 3' to + 2' (~5')
	0.5'		Ventilated Cap (Y) N)
			GROUT
			Composition and Proportions: hole plug
			Tremled (Y/M) Interval BGS: /. 5 - 0.5'
			CENTRALIZERS Deptr(s)
	1,5	4	
			Type: pellets - ben formite
			2 - 0
	ð'	<u> </u>	Source: 12mora
			Setup / Hydration Time: Vol. Fluid Added 5 14
	3 +-		Tremied (Y (N)) FILTER PACK
			- Global Dolling Sandy #7
			Amt. Used: 7-50 # buco Tremled (Y (N)) 2-14' BGS
			Tremled (Y (N)) 2 - 14 1 365
		12 3 W	Source: Glubal # 7
		13-13	Gr. Size Dist:
		126 9/21/17	SCREEN
			Type: PVC Schedule 40
		Y	Diameter
	14	17-14	Slot Size and Type: 0.0 (0'
	\	wle plug.	Interval BGS: 3 - 13
	117'	3300000000	WELL FOOT (Y/N)
			Interval BGS: Length
	TD: 17	▼ [22222222	Bottom Cap (Y) N)
		Borehole - 8 lu	BACKFILL PLUG
		Dia.	Material: hole plue
	•		Setup / Hydration Time: 77-1024



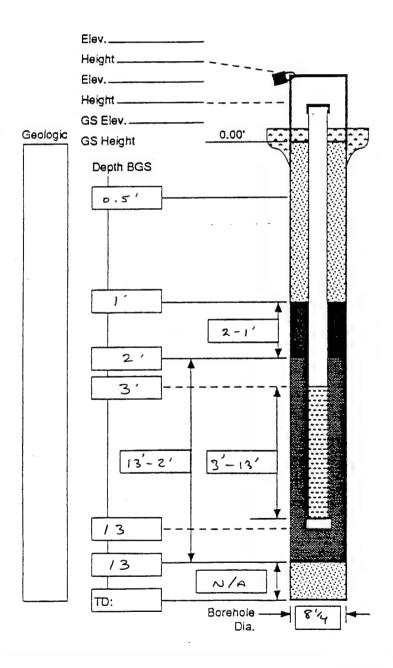
Project Name: Phelps Collas ANG	Project Number: 93/800	Date: 8/29/93
Well SIMWII	Well ID: SIMULI	Sheet 1 of 1
Driller: D. G. Ffels	Borehole Diameter (in): 8/4 1 0.0	Total Depth (ft): 13
Drilling Agency: Stearns	Date Started: 8 (29/93	Depth to Water (ft): ~ 3
Drilling Equipment CME 750	Date Finished: 8(29 (93	Elevation and Datum:
Drilling Method: Hollow Stem Auger	Loggied by: Lotnegel	Checked by Pf4 Can
Drilling Fluid: None	Number of Samples:	Date: —



PROTECTIVE CSG .
Material/Type: Steel caring
Diameter: 44
Depth BGS: -1 + 2.5' Weep Hole (Y (B)
GUARD POSTS (N)
No.:Type:
SURFACE PAD
Composition and Size: Concrete z' x z'
RISER PIPE Schedule 40 PVC
I VDU:
Diameter: 2" Total Length (TOC to TOS): -3' to +2' (5')
Ventilated Cap (Ŷ N) .
GROUT
Composition and Proportions: he le plute
1'- 0.5'
Interval BGS: 1 - 0.5 '
Interval BGS:
CENTRALIZERS N/A
Depth(s)
SEAL
Type: Bentonite pellets Source Boroid 2-1'
Source: Baroid 2'-1'
Setup / Hydration Time: Vol. Fluid Added 5 94 (()
Tremled (Y N)
FILTER PACK
Type: Global # 7
ATTL Used: 7-50# back Tremled (YN) 7/11/33 -2-14/ 2-14 BGS
Tremled (Y N) - 1/31 - 1 - 14 BG-5
Source: Clothal Drilling Supplies
Gr. Size Diat:
SCREEN
Type: Schelule 40 Prc Diameter: 2"
Diameter 2.
Slot Size and Type: 0.010"
Interval BGS: 3 - 73
WELL FOOT (Y (N)
Interval BGS:Lengtr
Bottom Cap (V) N)
BACKFILL PALIG
Material: 338 47 27 13
Committed and The co
Serup / Hydration Time: Form F-1024



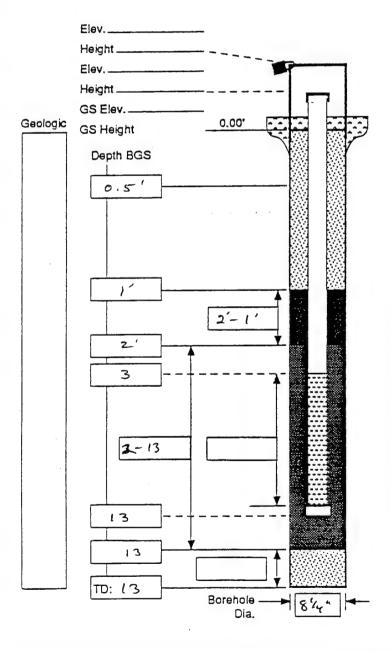
Project Name: Phelps Collins ANG	Project Number: 93/800	Date: 9/8/93
Well SIMW12	WHID: SIMWIZ	Sheet 1 of 1
Driller: D. Giffels	Borehole Diameter (in): 8/4 10.0	Total Depth (ft): /3
Drilling Agency: Stearns	Date Started: 9/8/93	Depth to Water (ft): ~3 '
Drilling Equipment CME 750	Date Finished: 9/8/93	Elevation and Datum:
Drilling Method: Hollow Stem Auger	Logged by: 15 B	Checked by Placy
Drilling Fluid: None	Number of Samples:	Date: 9/22/23



 7.73
PROTECTIVE CSQ
Material/Type: Steel Caring
Name 4 "
Depth BGS: +2'2' Weep Hole (Y/N)
GUARD POSTS (YAN)
No.:Type:
SURFACE PAD
Composition and Size: Concrete 2' × 2'
RISER PIPE Type: Schedule 40 PVC Diameter 2"
Diameter: 2 "
Total Length (TOC to TOS): -3 h +2'
Ventilated Cap (Y) N) .
GROUT
Composition and Proportions: hole plug
1-0.5'
Tremled (Y (R)
Interval BGS: 1-0.5
CENTRALIZERS N/A
Depth(s)
SEAL
Type: Berbonite pellets Source: Baroid 2'-1'
source: Baroid 2-1'
Setup / Hydration Time: Vol. Fluid Added 5
Tremled (Y (N)
FII TER PACK
Type: Global #7 Ame Used: 6 - 50 # bags
Amt. Used: 6 - 50 # Dags
Tremled (Y/N) / /3 - 2
Source: Global Bulling Impoplies
Gr. Size Dist:
SCREEN // P PVC
Type: Schedule 40 PVC
Diameter 2 "
Slot Size and Type: 0.0(0"
WELL FOOT (Y (M) Interval BGS:Length
Bottom Cap(1)/N) BACKFILL PLUG
Material:
Sania / Midmiles Time:
Form F-1024 Tremled (Y / N) 9/1/91



Project Name: Phelps Collas ANG	Project Number: 93/800	Date: 9/21/93
WHI SIMWI3	Well 10: SIMW 13	Sheetofl
Driller: D. Giffels	Borenole Diameter (in): 8/4 1 0.0	Total Depth (ft): 13
Drilling Agency: Stearns	Date Started: 9/8/93	Depth to Water (ft): ~ 3 '
Drilling Equipment CME 750	Date Finished: 9 (10/93	Elevation and Datum:
Drilling Method: Hollow Stem Auger	Logged by: DRJ/JSB	Checked by:
Drilling Fluid: None	Number of Samples:	Date:



PROTECTIVE CSQ
Material / Type: Sted' Cosung
Diameter:
Depth BGS: +2'3' BG-S Weep Hole (Y (N)
GUARD POSTS (Y N)
No.:Type:
SURFACE PAD
Composition and Size: con wete 2' x 2'
Type: Schedule 40 PVC Diameter: 2"
Type: Schedule 40 PVC
Diameter: 2 "
Total Length (TOC to TOS): +23' BG-S
Ventilated Cap (Ŷ N) .
GROUT
Composition and Proportions: hale plune 0.5-1'
Interval BGS: 0.5 - 1 /
Interval BGS:
CENTRALIZERS N/A
Depth(s)
SEAL
Seal bentonte pellets Type: Baroid 2-1'
Source: 150001d 2-1
Setup / Hydration Time:
Tremled (Y N
FILTER PACK
Type: Global Drilling #7 Ame Used: 6-50# began
Amt. Used:
Tremed (Y (N) Global Drilling Emplies
Gr. Size Dist.: SCREEN
Type: Schedule 40 PVC
Slot Size and Type: 0.0:0 5 Interval BGS: 3 - / 3
Sot Size and Type 3 - /3
WELL FOOT (Y (G)
Interval BGS: Length Length
Bottom Cap (③/ N)
BACKELL DILIG
Majerial: 156 9(2: (93
Setup / Hydration Time: Form F-1024
_ Tremled (Y / N) 9/1/91

The	Earth	Technol	ogy
-		20	

Projoca Name: Phulps Collins ANG	Project Number: 9380	Date: 9/1/93
well SIMW14	WHITD: SIMWIY	Sheet / of /
Driver. D. G. Ffels	Borenoie 14/4"0. D. to 14. 560 Diameter (in): 8 4/4"0. D to 30	Total Depth (m: 30'
Drilling Agency: Stearns	Date Started: 9/10/93	Depth to Water (tt): ~ 3
Drilling Equipment CME 750	Date Finished: 9 / u /9.3	Elevation and Datum;
Drilling Method: Hollow Stem Auger	Looped by: DEJay ne	Checked by: 18 Brueye
Drilling Fluid: No me	Number of Samples: /	Date:

	Drilling Fluid:	None
t	vote; set sui	fale Cusing of 10/4° I.D from 1.5° above ground to 14.0° Bgs.
	Elev	14, 10' Bqs.
	Height	
	Elev	
	Height	
	GS Elev	1 1 1
Geologic	GS Height	0.00'
	Depth BGS	
-		Y
		」「「」」
		一
		一
		+
L	TD:	Borehole —
		Dia.
	Boschole	0-14 bgs 104 1.D.
	surface la	ising
		/

PROTECTIVE CSG
Material/Type: Steel Caring
Diameter. T
Depth BGS: +2'2' BC-S Weep Hole (Y (N)
GUARD POSTS (M)
No: 3 Type: adar
SURFACE PAD
Composition and Stre. 2 X Z Century Pard
Type: Schedule 40 PUC from
Diameter: - 2"
Total Length (TOC to TOS): 10
Ventilated Cap (Y / N)
GROUT
Composition and Proportions: Cement (Type 1)
bentonite 16-0.5' BGS
Tremled (Y) N)
Interval BGS: 16 - 0.51
CENTRALIZERS A. / A
Depth(s)
SEAL , , , , , ,
Type: Baroid bentonik Jeal - hand
Type: Baroid Bentonik Seal - haird * Source: 18-16' BGS
Setup / Hydration Time: Vol. Fluid Added
Tremied PM JFJ
FILTER PACK
Type: Global Fither Pack #7
Type: Global Filter Pall To / Amt Used: 6/50/6 bags Tremled (Y/A) 30 - 18 Source: 6 Global Dolling supplies
Tremled (Y/K) 30 - (8
Source: 8 Global Drilling supplies
Gr. Size Dist:
SCREEN School JA PV
Type: Schedule 40 PUC Diameter: 2"
Diameter
Slot Size and Type: 0,0/0 https://doi.org/10/10/10/10/10/10/10/10/10/10/10/10/10/
WELL FOOT (Y(N))
Internal DCC
Bottom Cap (Y / N)
BACKELL PLUC
Maierial:
Setup / Hydration Time:
Tremled (Y / N)
Form F-1024
Filter out from 30-18,5 Bas

C-104



Project Name: Phelps Collins ANG	Project Number: 93/800	Date: 8/16/93
Well	WHI ID: MPJMW6	Sheet of 1
Driller: D. GIFfels	Borehole Diameter (in): 8 4 0 , D .	Total Depth (n): 43
Drilling Agency: 5tearns	Date Started: 8/16/93	Depth to Water (ft):
Drilling Equipment CMF 750	Date Finished: 8/16/93	Elevation and Datum:
Drilling Memos: Hollow Stem Auger	Logged by: DESayue	Checked by: PHCan
Drilling Fluid: None	Number of Samples:	Date: 9/22/53

	Height
Geologic	GS Height 0.00'
	Depth BGS Elev.
	Depth BGS
	0.3
	9
	LI
	<u>''</u>
	<u>/2</u>
	27
	28
	TD: 4/ Borehole
	Oia.

PROTECTIVE CSG
Material / Type: OFT / /
Diameter. 9/
Depth BGS: Weep Hole (Y / N)
GUARD POSTS (Y (N)
No.:Type:
SURFACE PAD / /
Composition and Size: Concrete 2X2
Type: Schedule 40 PUC
Diameter: 2"
Total Length (TOC to TOS):
Ventilated Cap (Y / N)
GRQUT
Composition and Proportions:
Tremled (Y / N)
Interval BGS: DFJ
CENTRALIZERS 9/2.
Depth(s) (2)
SEAL
Type:
Source:
Setup / Hydration Time: Vol. Fluid Added
Tremied (Y / N)
FILTER PACK
Type: 6lobul # 7
Amt Used: 7/50/85 hags
Tremied (Y/D) - Global Drillian Superior
Source: Global Drilling Supplies
Gr. Size Dist:
Type: Schedule 40 PVC
. #
Slot Size and Type: 0.0/0"
Slot Size and Type:
WELL FOOT (Y/N)
Interval BGS: Length Length
Bottom Cap (D/N)
Material: Hole Plug 28-27
Setup / Hydration Time: Form F-:023

Tremied (Y / N)



Project Name: Phelps Collins ANG	Project Number: 931800	Date: 8/11/93
Well	WHI ID: MPZ MW7	Sheet 1 of 1
Driller: D. 6.ffels	Borehole Diameter (in): 84" 0.0	Total Depth (ft): #5
Drilling Agency: Stearns	Date Started: 0/1/92	Depth to Water (ft):
Drilling Equipment: CME 750	Date Finished: 8/17/93	Elevation and Datum: PHLoy
Drilling Method: Hollow Sten Augu	Logged by: Affayne	Checked by:
Drilling Fluid: NORE	Number of Samples:	Date:
	PROTECTIVE CSQ	

Material / Type: Diameter:

			Depth BGS:	Weep H
	Elev.		GUARD POSTS (Y/N) 173	
			No.: Type:	
	Height		SURFACE PAD Composition and Size: Contacte 2 x 2	
	GS Elev		Composition and Size:	
Geologic	GS Height 0.00'		Type: schedule 40 PVC	
	Depth BGS Elev.	الثقة المستحدث	Diameter: 2	
	Depth BGS		Total Length (TOC to TOS):	
			Ventilated Cap (Y) N)	
,	0.3	₩	GROUT	
			Composition and Proportions: 6 voit / cement	- he. I.
1			misture	-400
			Tremled (Y /(N))	
			Interval BGS:	
			CENTRALIZERS DET 7/2	
			Depth(s)	
			SEAL 73	
			Type:	
			Source: DFJ 6 1	
			, 72. 1	
			Tremied (Y / N)	fluid Adde
	5'	- A :::	FILTER PACK	
		::: <u>:</u>	Type: Global #7	
	İ		Amt. Used: 7 - 5010 bags	
			Tremied IV MI	
			source: 6/obal Drilling Supplies	
			Gr. Size Dist.:	
			SCREEN	
			Type: schedule 40 Puc	
			Diameter: 2"	
	15'		Slot Size and Type: 0, 0/0"	
			Interval BGS: 5'-15'365	
		— A 2000/2000/20	WELL FOOT (Y I/N)	
			Interval BGS:Len	gth
	TD: 15'	→ ₩ ₩ ₩ ₩ ₩ ₩ ₩ ₩ ₩ ₩ ₩ ₩ ₩ ₩ ₩ ₩ ₩ ₩ ₩	Bottom Cap (Y / N)	
	Borehole		BACKFILL PLUG	
	Dia.	'	Material: DFJ	

Tremied (Y / N)

Form F-1023

Borehole -Dia.

Corporation Monitoring Well Constr	uction Log - Flush Mo	
Project Name: Phelps Collins ANG	Froject Number: 931800	Date: 8/25/93
well CG3 MW6	Well ID (63 MW 6	Sheetof
Druer: D. Giffels	Borehole Diameter (in): 8 //y	Total Depth (ft):
	Date Staned: \$\ 25/9 \\ 3	Depth to Water (ft): - 15
Drilling Agency: Steams		Elevation and
Drilling Equipment CM& 750	Date Finished: 83413	Danim:
DIEING MODOS: Hollow Stem Auger	Looped by: JSB	Checked ph H (
Orlling Fluid: None	Number of Samples:	Date: 9/22/93
	PROTECTIVE CSG Material / Type: 156 8 25 97 Diameter: Depth BGS:	Weep Hole (Y/I
: 	GUARD POST8 (Y/N) No.:Type:	
Elev.	SURFACE PAD	7
Height	Composition and Size:	
logic GS Height Depth BGS Depth BGS Depth BGS	Type: Diameter: Total Length (TOC to TOS): Ventilated Cap (YN)	PYC
1.5	GROUT Composition and Proportions: Tremied (Y / N)	
	Interval BGS: CENTRALIZERS Depth(s)	
Z']	SEAL Type: Source:	
23		ng Supplies \$7
15 10	Amil Used: Tremled (Y (N) 6 le bal Da Source: Gr. Size Dist.:	elling Emplies
	SCREEN Type: Schedule 40 Diameter: 2" Siot Size and Type: 0.010	110
33	Interval BGS: 73 - 3 WELL FOOT (Y/N) Interval BGS:	Length
TD: Borehole	BOTTOM C2p (Y) N) BACKFILL PLUG	

Maierial:_

Setup / Hydration Time: Tremied (Y / N)

none

Form F-1025



	3	
Project Name: Phelps Collins ANG	Project Number: 93/800	Date: 8/38/93
Weil	WHI ID: CG3 MW7	Sheet of
Driller: D. Giffels	Borehole Diameter (In): 84" O.D.	Total Depth (ft): 35/
Drilling Agency: Stearns	Date Started: 8/36/93	Depth to Water (ft): 14
Drilling Equipment CMF 750	Date Finished: 8/3//93	Elevation and Datum:
Drilling Memod: Hollow Stem Auger	Logged by: PH Lan	Checked by:
Orilling Fluid: None	Number of Samples:	Date: 9/22/93
	PROTECTIVE CSQ	1 1 -

		Depth 6G3.
		GUARD POSTS (Y / N)
	Elev	No.:Type:
	Height	SURFACE PAD
	GS Elev	Composition and Size: 2×2' Coverete
Geologic	GS Height 0.00'	RISER PIPE Type: PVC School 40
	Depth BGS Elev.	Diameter: 2" ID .
	Depth BGS 0.3	Total Length (TOC to TOS): 6.3 +o.
		Ventilated Cap (X) N)
. 1	0.3	GROUT
		Composition and Proportions:
		Tremled (Y/W)
		Interval BGS: 0.3 +0 9
		CENTRALIZERS
	8'	Depth(s) NA
		SEAL . II
	2	Type: Benton, typellets
		source: 61 abal Drilly 5. pplos
	10	Setup / Hydration Time: 30m mut cs
	12'	Tremied (Y / N)
	12	FILTER PACK
	###	Type: Global #7 Silica sound
	一	Ame Used: 5-50# Baces
		Tremied (Y /N)
	10	Source: Global Dalling Suppli
		Gr. Size Dist: #7
		SCREEN
		Type: DVC Schoole 40
	22'	Diameter 2" TD.
	33	Slot Size and Type: 0.010'
	35'	Interval BGS: WELL FOOT (Y/N)
	38	Interval BGS: NA
		Bottom Cap (Y / N)
	TD: Parabala	BACKFILL PLUQ
	Borehole —— Dia.	Material: cetting > / Hade alun
	Uld.	Setup / Hydration Time: 30 minutes

Form F-1023

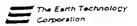
9/1/91

Tremied (Y / N)



Project Number: 931800	Date: 8/12/93
Well ID: SF5 MW5	Sheet 1 of 1
Borenole U/4 H	Total Depth (m:
Dale Staned: 8/12/93	Depth to
Date Finished: 6/12/43.	Elevation and Datum:
LOGONO BY: DEJOUGHE	Checked by: 55D
Number of Samples:	Date: 9/22/43
	Well ID: SF5 MLD 5 Borenole Diameter (In): 4/4 4 Date Staned: 8/12/93 Date Finished: 8/12/93 Logged by: DF5 ceyls

		Mazerial / Type: 4
	Elev	Depth BGS: Weep Hole (F) N)
		GUARD POSTS (N) /)
	Height	No: 4 Type: Tree
	Elev.	SURFACE PAD CONNETE 2X2
	Height	Composition and Size: Concrete 2 X 2
	GS Elev.	Type: Schedule 40 2" PUC
Geologic	GS Height 0.00°	Diameter: 2
	Depth BGS	TOS: 10
		Vendeted Cap (D) M) I Plug installed
		000 FT 1 / NET
		Composition and Proportions: The plan
		Barrie A BRUSTING TO SELLETS
1		Tremled (Y / N) Interval BGS:
		CENTRALIZERS VI
		Deptr(s)
		SEAL Bentonite Pellets B- Goostone
		Type: Bentonite relas B - Grosice
		Source: Va. Fluid Assec 1 gallon
	2'	
	3'	Tremled (Y / N) Fit TER PACK
		Type: Blobal Dailling Supplies Ame Used: 8 5016 bags
		AML Used: 8 5016 bags
		Tremled (Y/10)
	10' ##2	Source:
		Gr. Stre Dist:
		Type Schedule 40 PVC
		2"
ļ	19'	Slot Size and Type: 0.0/0"
		Interval BGS: 3'-14' WELL FOOT (Y/A)
		Injerial BGS:Length
		Bottom Cap (D / N)
	TD:	PACKETT BUILD
	Borehole —— Dia.	Maional:
		Selup / Hydrabon Time: Tremled (Y / N) Form F-1024
		Tremled (Y / N)



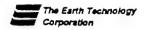
Projoc Name: Phelps Collins ANG	Project Number: 93/805	Date: 8/12/93
Well	Well ID: SF5 MW 6	Sheetof
Driver Stearns D. G. Fiels	Borenale Diameter (in):	Total Depth
Drilling Agency: Stearns	Date Started: 8/12/47	Depth to Water (th: 125)
Drilling Equipment CME 750	Date Finished: 8/12/93 .	Elevation and Datum:
Drang Metrod: Hollow Stem Auger	LOOSED BY Jayne	Checked by:
Drilling Fluid: No.ce	Number of Samples:	Date:

				Material / Type:	
	•			Diameter:	
	Elev			Depth BGS:	Weep Hote (Y/N)
	Height			GUARD POSTS (Y/N)	
	Elev.		F	No:Type:	
	Height			SURFACE PAD	
	•			Composition and Size:	
eologic	GS Elev	0.00'		Type: schedule 40 2" P	V.C
eologic	GS Height	0.00		Type: SCARLINE 40 & P	
	Depth BGS		A M	Diameter: 3"	
į	1			Total Length (TOC to TOS):	
			-	Ventilated Cap (M)/ N) GROUT	
1				Composition and Proportions:	
	ļ			Composition and Proportions,	
				Tremled (Y /(N))	
				Interval BGS:	
				CENTRALIZERS	
			_	Depth(s) Noice	
				•	
				Type: Bentonik Pellets	
İ				Source:	
		<u> </u>		Setup / Hydration Time:	Val. Fluid Added
				Tremled (Y/N)	
1				FILTER PACK	1.5
}	İ			Type Global DRilling Sup AMIL Used: 9 50/6 bags	p117)
				Arni Used: 4 50/0 has	
1				Tremled (Y/kg)	
				Source: Gr. Size Dist.:	
				SCREEN	
				Type: Schedule 40 PLK	
j			_	Diameter à "	
				Slot Size and Type: 0.010	
		'		Interval BGS:	
1				WELL FOOT (Y/M)	
ļ		,		Interval BGS:	Lengur
	TD:			Bottom Cap (Y / N)	
	10.	Borehole —	+	BACKFILL PLUG	
		Dia.	''	Material: Setup / Hydration Time;	
				Tremed (Y/N)	
					Form F-103



Project Name. Phelps Collins ANG	Project Number 931800	Date: 8/13/13
well	WHI ID: 5F5 MW 7	Sneet / of /
ormer D. G. Ffels	Borenole Diameter (in): 74 " P. D.	Total Depth
Drum Agency: Stearns	Date Started: 2/12/93	Depm to Water (ft):
	Date Finished: 8/12/93.	Elevation and Datum:
Drilling Equipment CME 750 Drilling Method: Hellow Stem Augler	LOOSED BY: JSB-18-32	Checked by: DEJ
Drilling Fluid: INAL	Number of Samples:	Date: 9/22/93

				PROTECTIVE CSG	
				Material / Type: 4	
				Diameter: 2	Weep Hote (M/ N)
	Elev			Depai 200.	
	Height			GUARD POSTS (FIN) NO: Type: Stee!	
	Elev.	-		SURFACE PAD	/
	Height			SURFACE PAD Composition and Size: Concrete 2'X	2
	GS Elev.				
ologic		0.00'		Type: 5 chedule 40 Pl	
0.09.0	GS Height	5.	مشور المستحد	Obmeter: 3"	
	Depth BGS	Y		Total Length (TOC to TOS): /O	
1				Ventilated Cap (Y / N)	1 1
				GROUT Composition and Proportions: Cemen be	atorite
			₩ ₩	Composition and Proportions:	
. }				Tremled (Y/kg)	
1				Interval BGS:	
				CENTRALIZERS None	
				Depth(s)	
	1,5'	A		SEAL BOAT THE Holeplan	21-15 /2 50
		1.5		Type: Bentonite Haleplus	<u> </u>
		1.5		Source	
	3'	<u> </u>		Samp / Hydramat Title	_ Val. Fluid Added
				Tremied (Y/W)	
	4	1		Type: Global Drilling Suppli Ame Used: 7 50/63 bags	15 # 7
				AML Used: 7 50/63 6093	
				Tremled (Y (N)	
				Source: /3	
	12'	10	- H	Gr. Stre Dist:	
				SCREEN Schille LO PVI	
				SCREEN Schedule LIO PVI Type: 3" Diameter 3" O:010"	
				Slot Size and Type: 0.0[0"	
	14	T		Slot Size and Type O. 0 0 " Interval BGS: 14" 4"	
		+		WELL FOOT (Y N)	
	15	<u> </u>		Interval BGS:	Length
		<u> </u>		Borrom Cao (G/ N)	
	TD: 15	Borehole ——	18%00	BACKFILL PENG DE	
		Dia.	8400.	Setup / Hydratign Time:	
				58105711,000	5 5 1034



Project Name: Phelps Collins ANG	Project Number: 93/800	Date: 8/31/93
Well	WHI ID: LEGRED 8 SES	7 // .
Driller: D. G. ffals	Borehole Diameter (in): 8/4"0.P.	Total Depth (ft): 26
Drilling Agency: Stearns	Date Started: 8/31/93	Depth to Water (ft):
Drilling Equipment CME 750	Date Finished: 8/3/ /93	Elevation and Datum:
Drilling Method: Hollow Sten Auger	Logged by: [Spriege]	Checked by:
Drilling Fluid: No ne	Number of Samples:	Date: 9/22/93

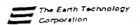
	Elev		
	Height		
	Elev		
	Height		
	GS Elev.	_	
Geologic	GS Height	0.00'	
	Depth BGS		
	,,		
	5'		. 💥 💥
		8	
	13'	•	
	15'		
		1	
	7	5'	
	20'		
	20'		
	TD: 20'		
		Borehole ——> Dia.	4/4/10

	Number of Samples:	Date: 9/22/93
1	PROTECTIVE CSG	7
i	Material / Type: //	
-	Diameter: 4	
1	Depth 8GS:	Weep Hole (Y / N)
-	GUARD POSTS (V) N)	
1	No.: 4 Type: Steel	
	SURFACE PAD	
(Composition and Size: Concrete 2	ca .
	Type: Schidule 40 PVC	
	Diameter: 2"	
	Total Length (TOC to TOS): 17	
١	Ventilated Cap (Y / N) .	
	SPOUT	\
(Composition and Proportions: Benton	·k
7	Fremled (Y / 61)	
li	nterval BGS: 0-5	
	ENTRALIZERS	
	Depth(s) ————————————————————————————————————	
9	Bentonik Pellets	
T	ypo: Benton, & Pelets	
S	Source:	
	Setup / Hydration Time:	Vol. Fluid Added
	remied (Y //N)	
	TILTER PACK YOU: 6/06al #7	
		· · · · · · · · · · · · · · · · · · ·
	remied (Y/1) 6105al Dr. Iling	s. die
_		suppliès
9	CREEN	
T	CREEN Schedule 40 PVC Hameter 2"	
D	lameter Z''	
-	IAT SIZE GOAL TURE: U. V. V.	
in	terval BGS: 15'-20' \$65	
	FELL FOOT (Y (H)	
	terval BGS:	Length
8	OTTOM Cap () (1)	
В	ACKFILL PLUG	
	laterial:	
S	etup / Hydration Time:	Farm 5 1004



Projoc Name: Phelps Collins ANG	Project Number: 931800	Date: 9/10/93
WOIL SEEMW9 (SEETW9)	WHI ID: SFISMW9	Sheetot
Driller: D. G. Ffels	Borehole Diameter (in): 814	Total Depth / 8.5
Drilling Agency: Steering Drilling	Date Started: 4 9 9 9 3	Depth to Water (ft): ~ 8
Drilling Equipment CME 750	Date Finished: 9/10/9.3	Elevation and Datum:
Dritting Method: hollow shem anger	Logoed by: DAT/JSB	Checked by: DKV
Drilling Fluid: None	Number of Samples:	Date: 9/22/93

				Material / Type: Shee! Diameter: ""	
	Elev			Depth BGS:	Weep Hole (Y / N)
	Height			GUARD POSTS (Y/N)	(,
	Elev.			No: Type:	
•				SURFACE PAD	
	Height			Composition and Size:	
0 - 1	GS Elev	• • • •		RISER PIPE	•
Geologic	GS Height	0.00'		Type: Schedule 40 PVC	
	Depth BGS		V	Diameter: - 2"	
	1			Total Length (TOC to TOS): 8.5 -	
				Ventilated Cap (N)	
	<u> </u>			Composition and Proportions: hale plung	
				Composition and Proportions:	
				Tremled (Y /(N))	
				Interval BGS:	
				CENTRALIZERS	
	5'			Depth(s) N/A	
1 1				SEAL , , , , ,	
		2'		SEAL bentonite pellets	
-	7'	* **		Source:	
		À		Setup / Hydration Time:	_ Val. Fluid Added
	8.5			Tremied (Y/10)	
	0,0			Type: Global deiling so	splees #7
				Arnt, Used:	
1		10'		Source: Global dulling	supplier
		10		Gr. Size Dist:	
				SCREEN Schedule 40 PV	•
					
	18.5			Dlameter D.OLO	
	10.5			Interval BGS: 18,5 - 8,5	
	185	•		WELL FOOT (Y (N)	
	10,5	↑ *		Interval BGS:	i_ength
	125	└	X	Bottom Cap (N)	
	TD: 18.5	Borehole 81/4 0.		BACKFILL PLUG N/A	
		Dia.	0.] [Majoria,	
				Setup / Hydration Time;	
				THE THEFT (T/N)	E E 102

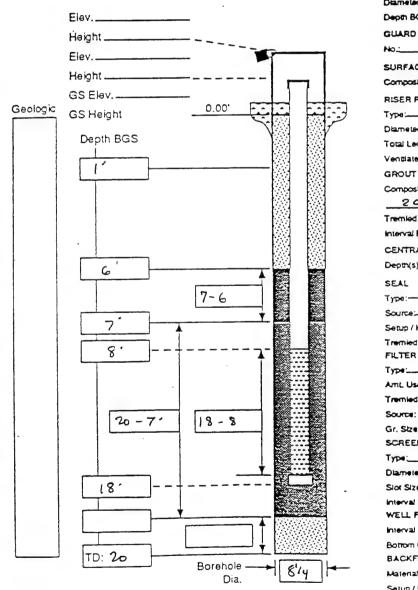


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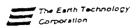
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Monitoring Well Construction Log - Above Ground

Projoc Name: Phelps Collins ANG	Project Number: 931800	Date: 8/11/93
WOH LFGMW4	MAILID: LEG MW4	Sneet _ 1 at _ 1
Driver D. GIFFOIS	Borenole Diameter (In): 414"	Total Depth (m): Zo
Drilling Agency: Stearns Drillings	Date Started: 8 (11) 43	Depth to Water (tt): ~ 9.5 '
Drilling Equipment CME 750	Date Finished: 8 11 93	Elevation and Datum:
Drang Metrod: Hollow stem anger	L000+0 by: 15 (Sreegel	Checked by: USB.
Drilling Fluid:	Number of Samples:	Date:



Material/Type: Stee (Can my
Diameter.
Depth BGS: +22 Weep Hote (TV N)
GUARD POSTS (M) M)
No: 4 Type: Skel/concrete
SURFACE PAD
SURFACE PAD Composition and Size: Commercete 2' x 2'.
RISER PIPE Schedule 40 2" PVC
Diameter: 2 Total Length (TCC to TOS): 10' (▼8' - + 2')
Ventilated Cap (R)/ N)
GROUT
Composition and Procortions: hale plug -
200 /he Baroid
/- / -
Tremled (Y/10) 158 9/22/33 6 -1,0 ' Interval BGS: 7-60'
CENTRAL PERS .
Deptr(s)
Bentonite bellets - GEOSTORI
5000 Branav - 141 man 7-6'
Type: Benton, to bellets - GEDSTORE Source: Brain and - 16/1 man 7-6' Setup / Hydration Time: Val. Fluid Added 5 gettle
Tremied (Y (N))
Tros: Global Drilling supplies #7
Type: Global Drilling, supplies \$7 ATIL Used: 7 50# bugs Tremled (Y(N)
Tremled (YVN) 20'-7'
Source: Global Drilling Supplier
Gr. Size Dist:
SCREEN
Type: Scholule 40 PVC
Type: Scholule 40 PVC Diameter: 2" Slot Size and Type: 0.000"
Slot Size and Type: 0.0(0"
Interval BGS: 18-8'
WELL FOOT (Y/16)
Interval BGS:Length
Botrom Cap (Y) N)
BACKFILL PLUG
Material:
Setup / Hydrabon Time;
Tremled (Y N) Form F-1024

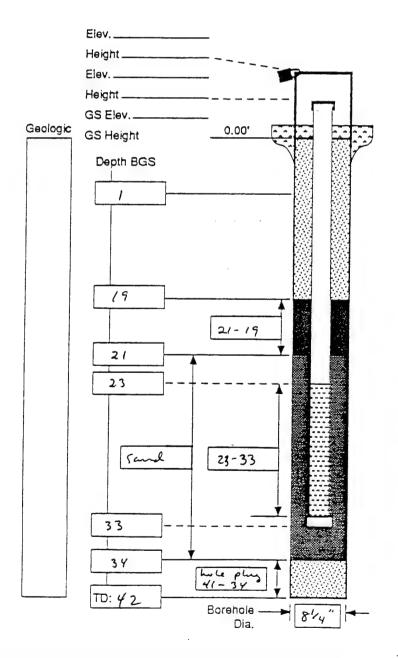


Projoc Name. Phelps Collins ANG	Project Number: 931800	Date: 8/11/93
well LF6 MW5	WOILD: LFGMW5	Sneet of
Driver D. G. Ffels	Borenole Diameter (in): 4 1/4 1.D.	Total Depth (m): 20"
Drung Agency: Steams Dulling	Date Started: 9/1/53	Depth to Water (ft):
Drilling Equipment (ME 750	Date Finished: 8/11/97.	Elevation and Datum:
Drilling Metrod: Steams Drilling	LODGE by: JS Brege	Checked by:
Drilling Fluid: wone	Number of Samples:	Dalle:

	•			Mazorial/Typo: Sheet can ing	
	Flore			Depth BGS: -2'-+2'	Weep Hoie (Y ๋ ๋ ๋ ๋ ๋ ๋ ๋ ๋ ๋
	Height				1/concrete - Fil
	Elev.		٦ '	No: 7 Type: 31	1/01.54
	Height			GUARD POSTS (M) M) Type: Stee SURFACE PAD Composition and Size: 2' × 2'	concrete
	GS Elev.				
ologic	GS Height	0.00'		Type: Schole 40 PV	
	G3 (leight		مسمول	Diameter: 2 "	9,
	Depth BGS	₩	3	Total Length (TOC to TOS): The	8
1			3	Ventilated Cap (V) N)	
	1.			GROUT Composition and Proportions: hole F	lug
				Composition	0
				Tremled (Y/1) 6-1	
1			N .	Interval BGS:6	
				CENTRALIZERS N/A	
	6			Depth(s)	
-				SEAL Landon to pellet	- Gostone
İ		7'-6		Type: hantom to pellet. Source: Brainer & K. ima	~ 7-6'
		Y		Source: Setup / Hydration Time:	Va. Fluid Added 5
	7			Tremled (Y /(N))	16llon
	8				
		T #		Type: Global Drilling	Supplies #/
				Type: Global Drilling Amil Used: 7-50 = 50 Tremled (Y M) 20-7	
				Source: Global Drilling	c. 1.
				Source: - Global Drilling	, mapile
		18-8, #		Gr. Size Dist.:	
				SCREEN SCLEDING TO P	vc.
				Type: Schedule 40 P	
				Diameter D-010"	
	/8			Slot Size and Type: 0.010 " Interval BGS: 8 - 18 "	
				WELL FOOT (Y/M)	
		↑		Interval BGS:	Lengtr
		 		Bottom Cap (M) N)	
	TD: 20	Borehole	714	BACKFILL PLUG	
		Dia.		Material:	
				Setup / Hydration Time,	
				Tremied (Y / N)	Form F-10



Project Name: Phelps Collins ANG	Project Number: 93/800	Date: 9/22/93
Well UFGMWG	Well ID: LFGMWG	Sheet 1 of 1
Driller: D. G.ffels	Barehale Diameter (in): 8/4 1 0.0	Total Depth (m: 42'
Drilling Agency: Stearns	Date Started: 8/14/53	Depth to Water (ft): ~ / 4
Orilling Equipment CME 750	Date Finished: 8(14/ 13	Elevation and Datum:
Drilling Method: Hollow Stem Auger	Logged by: DFJ	Checked by: J5B
Drilling Fluid: Noise	Number of Samples:	Date:



	Tronibar or dampies.
	PROTECTIVE CSQ Material / Type: Stee (Casing
	Diameter: 7 Depth BGS: -2 to 7 2' Weep Hole (Y (N)
	GUARD POSTS (BIN)
	SURFACE PAD
	Composition and Size: Orn crete 2' x Z'
	RISER PIPE Type: 5 che dule 40 PVC
	Diameter: 2"
	Total Length (TOC to TOS): -23 to +2'
	Ventilated Cap (Py N) .
	GROUT
	Composition and Proportions: bentonite 19-1'
	Tremled (Y N)
	Interval BGS:
	CENTRALIZERS
	Depth(s) ————————————————————————————————————
	Bentonite pellets 21-19'
	Type: Baroid (GEOSTORA)
;	Setup / Hydration Time: Vol. Fluid Added 5
	Tremled (Y (N) gallons
	FILTER PACK Type: Global # 7
	0 1 (5)
	211 211 21
	Fremled (YN) 34-21' 1365 Source: Global Drilling Suppolius
	Sr. Size Olat:
	SCREEN
	ype: Schedule 40 PVC
	Slot Size and Type: 0.016
	nterval BGS: 23-33' F L-5
	VELL FOOT (Y/A)
	nterval BGS:Length
8	Sottom Cap (N)
	ACKFILL PLUG
A	raional: bentonite (hole plus)
	erup / Hydration Time: 41 - 34
. 1	rombed (YM) (through angers) 9/1/91



四

Project Name: Phalos Collins ANG	Protect Number: 931800	Date: 8 15/93
WOIL LEGAMN 7	WOIL ID: LFGMW7	Sheet 01
Driver D. Giffels	Borenole Diameter (In): 44 1 D.	Total Depth 18
	Date Started: 8/15/93	Depth to Water (th) # 8.7
Druing Agency: Stearns	Date Finished: 8/15/93.	Elevation and Datum:
Drilling Equipment CINE 750	LOODED DESCYNE	Checked by: JSG
DIEMO MOTICO: Hallow Stem Auga	Number of Samples:	Date:
Drilling Fluid: None	Number of Samples.	

	0.0/0/0- ~4/1	PROTECTIVE CSO .
(a b	andoned 9/9/33 - ~4' 6	Maiorial/Type: Steel Casing
	surface filled w/ hole plug	Diameter: 4 Depth BGS: ~2 - +2' Weep Hole (A) N)
	Elev	
	Height	NO: 4 Type: Sheet where to Filled
	Elev	
	Height	Composition and Stret commerce 2 × 2
	GS Elev.	Type: Schedule 40 PVC
Geologic	GS Height 0.00'	7 '
	Death RGS	Diameter:
	Depth BGS	Ventrated Cap (GA N)
	1.5'	CPOIT
		Composition and Proportions: grout/cement/bentomite
		Tremled (Y (fi) 5- 1,5"
		CENTRALIZERS
		Depty(s)
	5	
	6-5'	Type: Holeplus / perlets 6-5'
		Source: Savoid Sann/Hydraton Time: Va. Fluid Added 5 galles
	6'	3025711701201
	8	Tremled (Y / (r))
		Type: Global 1=1ter Pact Type: Global 1=1ter Pact Amil Used: 9 5016 bags intural 18-6'811
		AML Used: 9 5016 bags 14Tura 1826 311
		Source: - Glubal Drilling Supplies
	18-6' 18-8'	Gr. Size Dist: 77
		Type Schedule 40
		Diameter_ B"DFS D-OFB DFS 2"
	18'	Slot Size and Type: 0.0/0" Interval BGS: /8'-8'
		WELL FOOT (Y/M)
}		Interval BGS: Length
		BOTTOTT Cab (M) N)
L	TD: 18 Borehole - 8'4"	Maienal:
	Dia.	Material: 356 1/21/13 Setup / Hydrabon Time:
		Tremled (Y / N) Form F-1024



Project Name: Phelps Collins ANG	Project Number: 93/800	Date: 9/22/93
WHI LFGMW8	Well ID: LFGMW8	Sheet 1 of 1
Driller: D. Giffels	Borehole Diameter (in): 8/4 1 0.0	Total Depth (m): 15
Drilling Agency: Stearns	Date Started: 8/27/93	Depth to Water (ft): ~ 9
Drilling Equipment CME 750	Date Finished: 8/27/93	Elevation and Datum:
Drilling Method: Hollow Stem Auger	Logged by: JSB/MES	Checked by: USG
Drilling Fluid: Noise	Number of Samples:	Date:

	Elev		
	Height		
	Elev.		
	Height		
	GS Elev.	1 7	7
Geologic	GS Height	0.00'	20 20
			شو
	Depth BGS	X	
	1,		
		₩.	
	6'	A	96.5
		1'	
	7'	A	
	8'		
		1	
	7'	5'	
			∷
	13'		
	, ,		
	14'	Y	
		1/	
	TD: 15	 	
		Borehole —	
		Dia.	

PROTECTIVE CSQ	
Material/Type: Steel casing	
Diameter: Y"	
Diameter:	p Hole (Y N
GUARD POSTS (N/N)	
No. Y Type: concrete fill	ed she
SURFACE PAD	
Composition and Size: concrete 2' × 2'	
RISER PIPE	
Type: Schedule 40 PVC	
Total Length (TOC to TOS): 8 16 + 2 1	
Ventilated Cap (Y) N)	
GROUT	
Composition and Proportions: Ber tonite	
Tremled (Y (N)	
Interval BGS: 6 - 1	
CENTRALIZERS	
Depth(s) — N/A	
SEAL A	
Type: Bentonte Rellets.	
source: Baroid 7-6'	
Setup / Hydration Time:	1000 5
Tremled (Y (N))	galions
FILTER PACK	· ·
Type: Global #7	
Ame Used: 4- 50 # 6ags	
Tremied (Y (N) 14-7' BC-5"	
	lies
Gr. Size Dist.:	
SCREEN	
Type: Schedule 40 PVC	_
3-THOUS.	
Slot Size and Type: 0-010"	
Interval BGS: /3~8°	
WELL FOOT (VIN)	
Interval BGS:Length	
Bottom Cap(Y) N)	
BACKFILL PLUG	/
Material: hole play (hentonite)	15-14
Setup / Hydration Time:	
	Form F-1024



ABOVEGROUND Monitoring Well Construction Log - Flush Mount

Project Name: Phelps Collins ANG	Project Number: 93/800	Date:
Well LF6MW9	WHID: LFGMW9	Sheet 1 of 1
Oriller: D. Giffels	Borenole Diameter (In): 84"0, D.	Total Depth /Le
Drilling Agency: Stearns	Date Started: 8/27/53	Depth to Water (ft): ~/0 '
Drilling Equipment CMF 750	Date Finished: 8/28/93	Elevation and Datum:
Orilling Method: Hollow Stem Auger	Logged by: MES	Checked by: \sqrt{SB}
Drilling Fluid: None	Number of Samples:	Date:

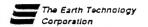
	Elev
	GS Elev.
Geologic	GS Height 0.00' Depth BGS Elev. Depth BGS
	pellets 7-5
	8
	/3-8 /Y-7'
	13
	TD: Borehole Bia.

PROTECTIVE CSG
Material/Type: Steel Carme
Diameter:
Material / Type: Steel Caring Diameter: #" Depth BGS: -2 to +2' Weep Hole (Y 15)
GUARD POSTS (M/N)
No: X 2 Type: concrete / Sheel
SURFACE PAD
Composition and Size: concrete 2'xz'
RISER PIPE
Type: Schedule 40 PVC
RISER PIPE Type: Schedule 40 Prc Dlameter: 2"
Total Length (TOC to TOS): + 2 to -8
Ventilated Cap (Y/N)
GROUT
Composition and Proportions: bentonite
Composition and Proportions: bentomite - 6' to - 1' 165 Tremled (Y (1))
Interval BGS: 366 6/
Interval BGS: 1 Willie
CENTRALIZERS
Depth(s) /U 🛧
SEAL Bentontes gellets Type: Buroid 7-5'
Source: Beroid 7-5'
Setup / Hydration Time: Vol. Fluid Added S
Tremied (Y(N))
EU TER DACY
Type: Global # 7
Type: Global # 7 Amt Used: 4 50 # 6-gs Tremied (YM) 14-7' Source: Global Drilling Supplies
Tremied (Y (N) 14-7'
Source: Global Drilling Supplies
Gr. Size Dist:
SCREEN
Type: Schedule 40 PVC
Diameter2 (1
SCREEN Type: Schedule 40 PVC Diameter 2" Slot Size and Type: 0.010" Interval BGS: 13-8"
Interval BGS: /3-8-
WELL FOOT (Y(N)
Interval BGS:Langth
Bottom Cap (Y) N)
BACKELL RILIG
Material: hole plug 15-14
Setup / Hydrapon Time:

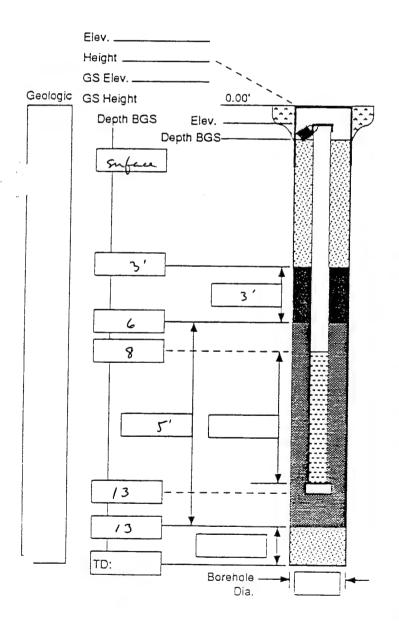
Form F-1023

9/1/91

Tremled (Y / N)



Project Name: Phelps Collins ANG	Project Number: 93/800	Date: 9/22/13
WHI LEGMWID	Well ID: LFUMWIO	Sheet of
Oriller: D. GIFFELS	Borehole Diameter (in): 8 4 0 , D .	Total Depth (π): /3 ′
Drilling Agency: 5tearns	Date Started: 9/12/93	Depth to Water (ft): ~9 /
Drilling Equipment: CMF 750	Date Finished: 9/13/93	Elevation and Datum:
Drilling Memod: Hollow Stem Auger	Logged by: JSB/DFJ	Checked by: JSB
Drilling Fluid: None	Number of Samples:	Date: —



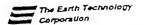
PROTECTIVE CSQ
Material/Type: Steel Casing
Diameter: 4"
Depth BGS: - 2' + 2' Weep Hole (Y/10)
GUARD POSTS (Y 🔊
No.:Type:
SURFACE PAD
Composition and Size: concrete 2' x 2'
RISER PIPE
Type: Schedule 40 PVC
Diameter: 2 "
Total Length (TOC to TOS): - 8 1 60 + 21
Ventilated Cap (Y) N)
GROUT 350 1/22/93
Composition and Proportions: hale place on the te
3' - sufere
Tremled (Y/N)
Interval BGS:
CENTRALIZERS
Depth(s) ~ ~ ~ ~ ~ ~ ~ ~
SEAL ,
Type: bentonte 6-3
Source: Beroid
Setup / Hydration Time: Vol. Fluid Added / Y
Tremied (Y (N)) Sallons
FILTER PACK
Type: Clobal #7
Ame Used: 4-50 to bugs
Tremied (Y (N)
Source: _ Global Drilling Supplies
Gr. Size Dist:
SCREEN
Type: Schedule 40 PVC
Dlameter2,"
Slot Size and Type: 0.010"
Interval BGS: /3 - 8 '
WELL FOOT (YIM)
Interval BGS:Length
Bottom Cap (V) N)
SACKELL PLUG
Material: YSB YZZ/3 Form F-1023
Setup / Hydration Time: Translet (Y / N) Form F-1023
Tremied (1/N)



Project Name: Phelps Collins ANG	Project Number: 93/800	Date: 9/4/73
Well MW5	WHI 10: HNBMW5	Sheet of 1
Driller: D. GI-FFELS	Borehole Diameter (In): 8 4 0, D.	Total Depth 20'
Drilling Agency: Stearns	Date Started: 9/1/93	Depth to / Water (ft): /3
Drilling Equipment CMF 750	Date Finished: 9/11/93	Elevation and Datum:
Drilling Memod: Hollow Stem Auger	Logged by: DeSayne	Checked by Patricula
Drilling Fluid: None	Number of Samples:	Date: 9/22/93

PROTECTIVE CSQ Material / Type:

				Depth BGS. Weep Hole (17 N)
	Elev.			GUARD POSTS (Y/N) 7/2/73
	Height			SURFACE PAD
	•			Composition and Size: Concrete & x z
Caplania	GS Elev.	`,		RISER PIPE
Geologic	GS Height	0.00	raca raca	Type: Schedule 40 Prc
	Depth BGS	Elev.	200	Diameter. 2
	De	pth BGS	300 2000	Total Length (TOC to TOS):
	/			Ventilated Cap (N)
				Composition and Proportions: Bentonite 6- surface
				Tremled (Y / 🗇
				Interval BGS:
				CENTRALIZERS
	6'		A B B	Depth(s)
		2'		SEAL bantonite Type: 150 14 155+
				Type: JSB 1/4/ST
	8			Setup / Hydration Time: Vol. Fluid Added /O galle
	9,5-'-			Tremied (Y /(ti))
	9,3		A 🚃	FILTER PACK
				Type: Webs #,7 51/100 SAND AMIL Used: 7/50/6 bags
				Tremied (Y (N)
		-	- :::	Source: Global smilling Supplies 30-8 865
	12	10		Gr. Size Dist.:
				SCREEN
				SCREEN Type: Schiclie 40 PVL Diameter Z
	19.51-			Diameter Z
	77.5			Slot Size and Type: 0.0/0" Interval BGS: 9.5'-/9.5' BGS
	20	<u> </u>		WELL FOOT (Y (FA))
			1 🕈	Timewal BGS: Length
	TD: 20'		*	BOTTOM CAD (Y/N) DES 4/22/93
	10. 20	Borehole -	4450	. ,
		Dia.	17932	Material: Setup / Hydration Tirage:
				Tremied (Y/N)



Project Name: Pholps Collins ANG RT	Frojed Number: 931860	Date: 8/36/93
Well bocation: Site 9 Radar Tower	Well ID: MW6	Sheet of
Driller Dennis G. FFels	Borenoie Diameter (in): 8 1/4	Total Depth 23 /
Drilling Agency: Stearns	Date Started: 8/36/13	Depth to Water (ft): ~ Ke.3 '
Drilling Equipment CME 750	Date Finished:	Elevation and Datum:
Drilling Method: Hollow Stern Auger	LOOSED BY: P ALay	Checked by:
Drilling Fluid: NONE	Number of Samples:	Date:

PROTECTIVE CSQ

Depth BGS:-

Material/Type: Flushmount Stock

Weep Hole (Y/N)

Form F-1025

				GUARD POSTS (YO)	
	Elev.			No.:Type:	
	Height			SURFACE PAD	
	GS Elev			Composition and Size: 2x2 Cowcretc	
Geologic	GS Height	0.00'		RISER PIPE Type: PYC Schelle 40	
	Depth BGS Ele	v. 0.3 Fin		Diameter, Z' ID	
	Depth B0	S 0.5		Total Length (TOC to TOS):	
	0.5			Ventilated Cap (Y N)	
	0.0			GROUT	
				Composition and Proportions: Poet aucl Tige & I G	_
	hole pluglipou	.d		T 0(10)	
				Tremled (Y (N) Interval BGS:	
				CENTRALIZERS	
	9			Depth(s) Nove	
		A		er ii	
		2'		Type Bentonite pellets bowder holepl	us.
				Source:	0
	11'	J S		Setup / Hydration Time: Vol. Fiuld Added	5
	13/			Tremied (Y / N)	
	13'	-		FILTER PACK	
				Type: Silica Sand	
				Amt Used: 1 bags	
				Tremled (Y D)	
	١٥١	16'		source: Global Drilling Supplies	
				Gr. Size Dist:	
				SCREEN Typo: PVC Schedule 40	
				Diameter: 2" ID	
	23'			Siot Size and Type: 15 Stat 0.010"	
				Interval BGS: 13 - 23	
				WELL FOOT (Y M)	
1		-G- 1		Interval BGS: Length	
				Bottom Cat (VV N)	
	TD: 23'	Parabala : 1 =		BACKFILL PLUG	
		Borehole &	14"	Maierial: NA	
		<i>D</i> .u.		Setup / Hydration Time;	
				Tremied (Y / N)	om F

Geotechnical Results

William Constitution of				1
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SUMMARY OF LABORATORY TEST RESULTS

			UNIT WEIGHT	EIGHT	SPECIFIC	ATTE	ATTERBERG			Project: <u>Earth Tech Lab Testing</u>
				<u>. </u>	GRAVIII		e in			Project Number: 3-4424-0000
										Date: October 12, 1993
Sample ID	Depth (ft)	Natural Moisture (%)	Wet	Dry	*5	Liquid Limit (%)	Plasticity Index (%)	Uniffed Soil Classiffcation	Other Test	Soil Description
P1 MW 10/ST-5	14.0 - 16.0	18.5	120.8	102.0	2.62	16	4	SM-SC	S,K	SAND, silty, clayey, brown
POS MW7/ST-3	18.0 - 20.0	14.1	138.9	121.8	2.76	12	9	SW	S,K	SAND, clayey, light brown with rock fragments
P3 B13/ST-1	53.0 - 55.0	19.7	108.7	8.06	2.75	21	11	CC	S,K	CLAY, silty, brown
LF6 MW7/ST-6	17.0 - 19.0	21.2	123.0	101.5	2.70	12	9	ML-CL	S,K	SILT, clayey, brown
P4 B15/ST-4	42.0 - 43.0	18.9			2.67	14	4	SM-SC	S	SAND, silty, clayey, brown Note: not enough sample for permeability
*P4 B15/ST-4	42.0 - 43.0	20.6	131.9	109.4	2.65	16	4	SM-SC	S,K	SAND, silty, clayey, brown
POZ B8/ST-2	55.0 - 56.0	17.8	137.9	117.1	2.70	30	16	כר	S,K	CLAY, silty, slightly sandy brown
										,
*This	*This is second attempt Shelby Tube Sample	Shelby Tube	Sample							

*ST-SHELBY TUBE SAMPLE, SS-SPLIT SPOON SAMPLE, C-COMPOSITE SPLIT SPOON **TEST RESULTS REPORTED ON OTHER SHEETS:

S-SIEVE OR GRAIN SIZE ANALYSIS U-UNCONFINED COMPRESSION TEST

K-PERMEABILITY

D-DIRECT SHEAR TEST T-TRIAXIAL TEST P-PROCTOR TEST

DATA CHECKED BY

GA Technical Services

SUMMARY OF CONSTANT HEAD PERMEABILITY METHOD ASTM D5084-90

Project : Earth Tech Lab Testing

Client : Earth Technology Corporation

Project No. : 3-4424-0000

Date : October 12, 1993

COEFFICIENT OF PERMEABILITY, cm/sec	1.8 x 10 ⁻⁴	3.5 X 10 ⁻⁵	2.1 X 10 ⁶	8.2 X 10 ⁻⁶	1.4 X 10 ⁻⁵	1.2 X 10 ⁻⁷
% MOISTURE	18.5	14.1	19.7	21.2	20.6	17.8
DRY UNIT WT PCF	102.0	121.8	8.06	101.5	109.4	117.1
SAMPLE AREA. sq. ft.	0.04276	0.04276	0.04276	0.04276	0.04276	0.04276
SAMPLE DIAMETER. in.	2.80	2.80	2.80	2.80	2.80	2.80
SAMPLE LENGTH. in.	2.72	4.28	4.22	4.34	3.41	4.16
SAMPLE ID	P1MW10/ST-5 D14 16.	POSMW7/ST-3 D18 20.	P3 B13/ST-1 D53 55.	LF6 MW7/ST-6 D17 19.	*P4 B15/ST-4 D42 43.	POZ B8/ST-2 D55 56.

C-126

*This is second attempt Shelby Tube Sample

SUMMARY OF CATION EXCHANGE CAPACITY METHOD EPA 9080

Project : Earth Tech Lab Testing

Client : Earth Technology Corporation

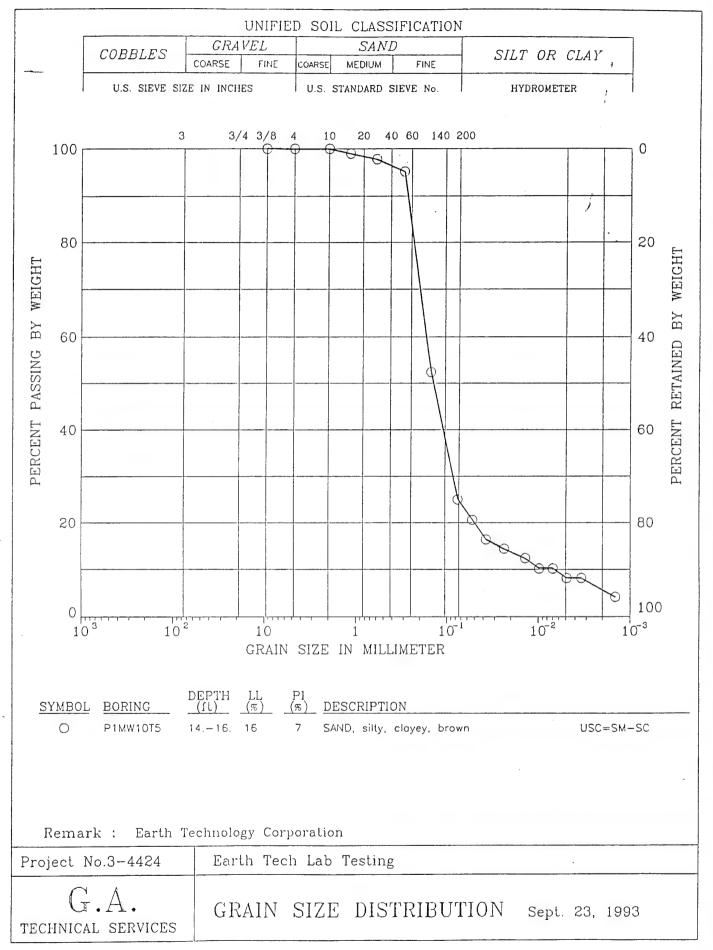
Project No. : 3-4424-0000

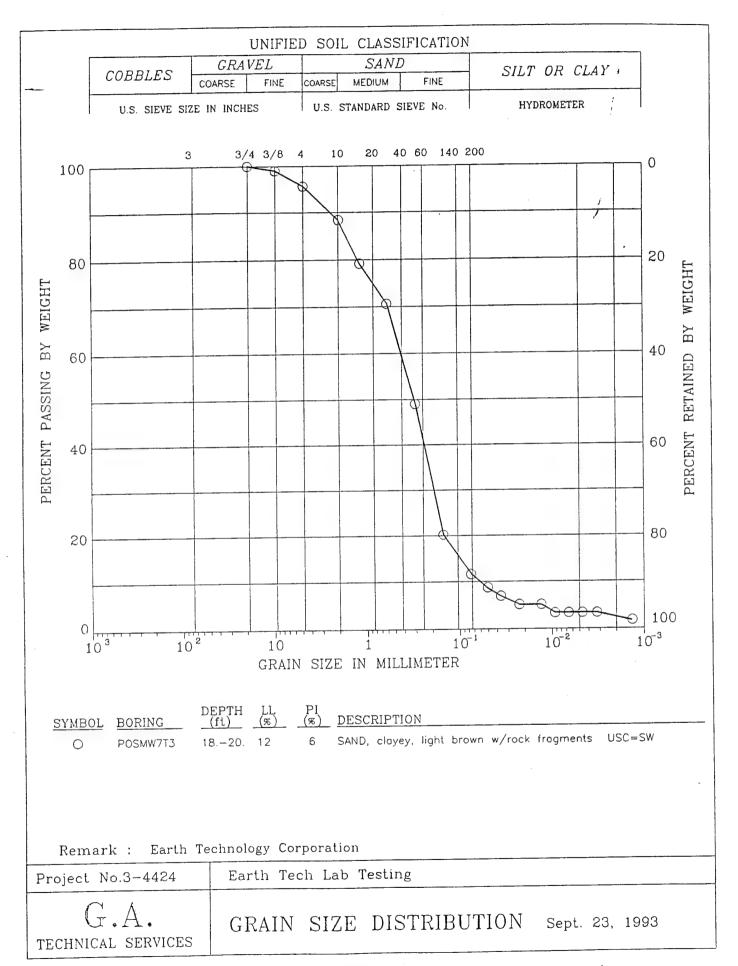
Date : October 11, 1992

SAMPLE ID	TOTAL CATION EXCHANGE CAPACITY me/100g
P1MW10/ST-5 - D14 16.	40.9
POS MW7/ST-3 - D18 20.	15.6
P3 B13/ST-1-D 53 55.	24.2
LF6 MW7/ST-6-D17 19.	7.4
P4 B15/ST-4-D42.0 - 43.0	3.8
P4 B15/ST-4-D42.0 - 43.0	13.5
POZ B8/ST-2-D55 56.	29.2

^{*}This is second attempt Shelby Tube Sample

CHP/jh [3442400.sce]

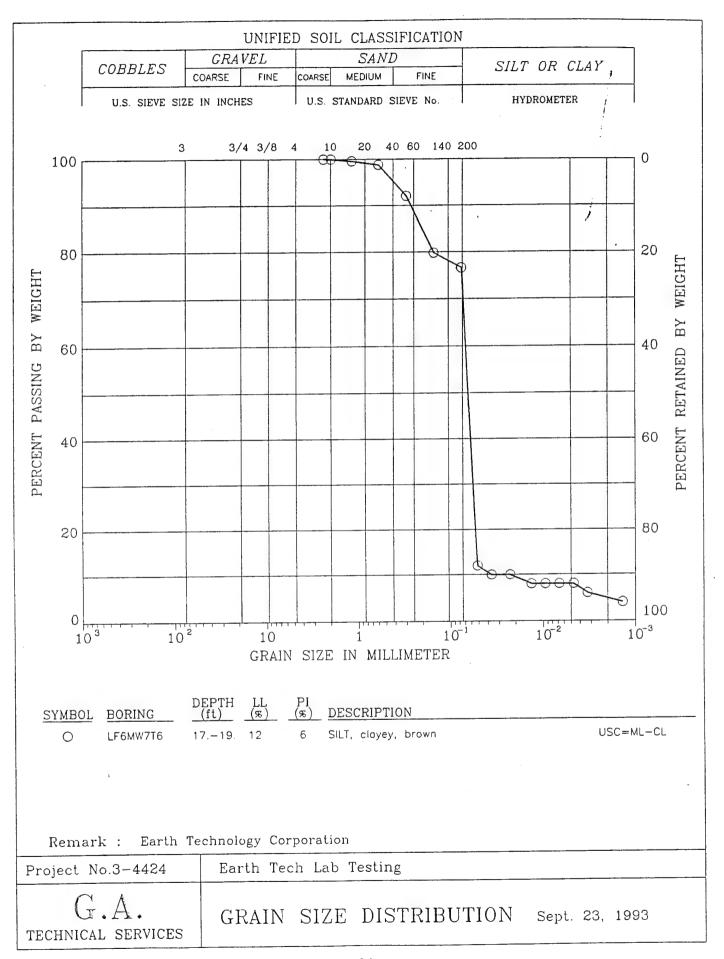


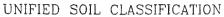


UNIFIED SOIL CLASSIFICATION GRAVEL SAND COBBLES SILT OR CLAY, COARSE FINE MEDIUM COARSE FINE U.S. SIEVE SIZE IN INCHES U.S. STANDARD SIEVE No. HYDROMETER 10 40 60 140 200 100 0 80 20 PERCENT RETAINED BY WEIGHT PERCENT PASSING BY WEIGHT 40 60 40 60 20 80 100 10-2 10 3 102 10-3 10 10 GRAIN SIZE IN MILLIMETER SYMBOL BORING DESCRIPTION 0 P3B13/T1 53.-55. USC=CL 11 CLAY, silty, brown Remark: Earth Technology Corporation Project No.3-4424 Earth Tech Lab Testing GRAIN SIZE DISTRIBUTION

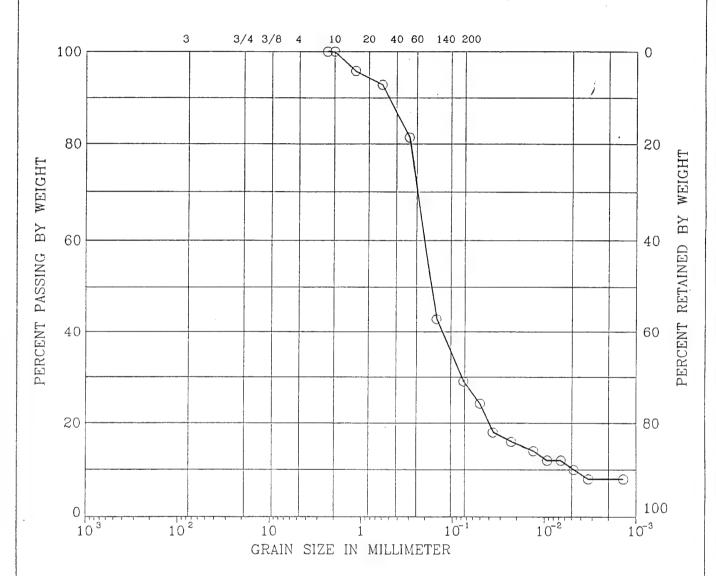
TECHNICAL SERVICES

Sept. 23, 1993





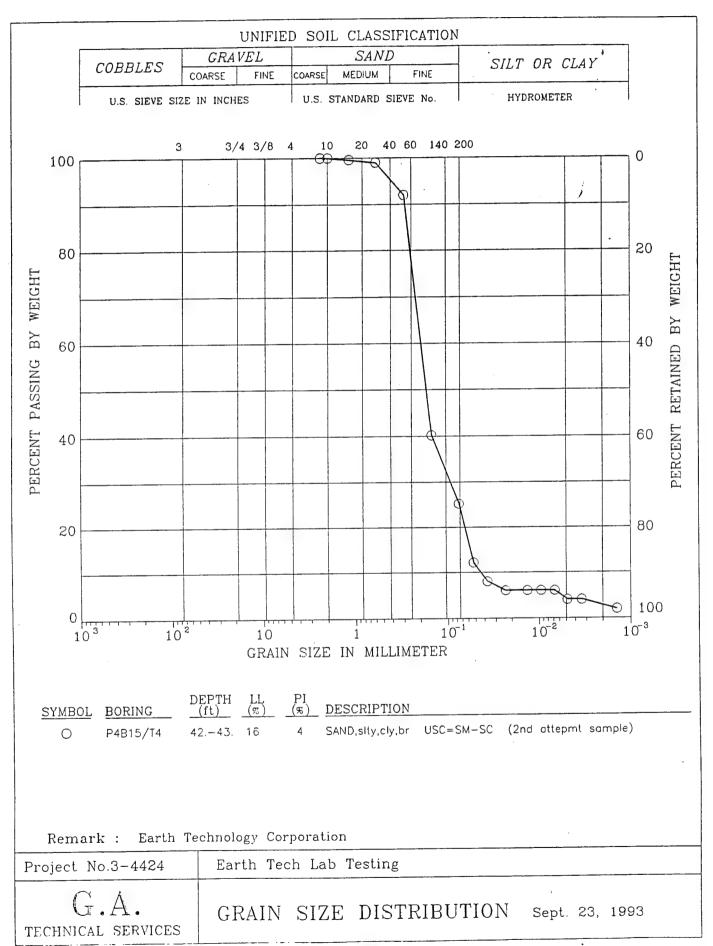
COBBLES	GRA	VEL		SANI)	SILT OR CLAY
CODDLES	COARSE	FINE	COARSE	MEDIUM	FINE	SILI UK CLAI
U.S. SIEVE SIZ	ZE IN INCH	ES	U.S. S	STANDARD S	IEVE No.	HYDROMETER

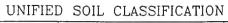


SYMBOL	BORING	DEPTH (ft)	LL (%)	PI (%)	DESCRIPTION	
0	P4B15/T4	4243.	14	4	SAND, clayey, silty, brown	USC=SM-SC

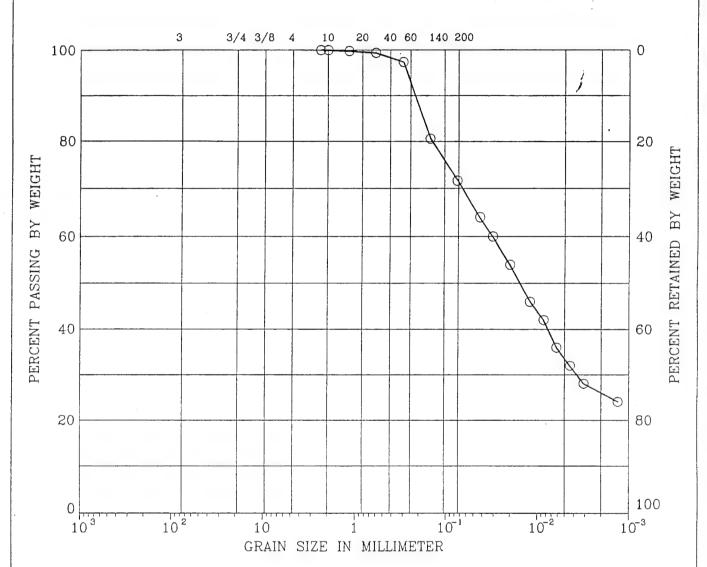
Remark: Earth Technology Corporation

Project No.3-4424	Earth Tech Lab Testing
G.A. TECHNICAL SERVIC	GRAIN SIZE DISTRIBUTION Sept. 23, 1993





CORPLES	GRA	VEL		SANI)	SILT OR CLAY
COBBLES	COARSE	FINE	COARSE	MEDIUM	FINE	SILI OK CLAI.
U.S. SIEVE SIZE IN INCHES		U.S. S	U.S. STANDARD SIEVE No.		HYDROMETER	



SYMBOL	BORING	DEPTH LL (ft) (%)	PI (%)	DESCRIPTION	-	
0	POZB8/T2	5556. 30	16	CLAY, silty, slightly sandy, brown	USC=CL	

Remark: Earth Technology Corporation

Project No.3-4424	Earth Tech Lab Testing
G.A. TECHNICAL SERVICES	GRAIN SIZE DISTRIBUTION Sept. 23, 1993

Appendix D: Analytical Results; Initial Site Screening

Explanation

JP-4	Jet Petroleum No.4	
1,1-DCE	1,1-Dichloroethene	
t-1,2-DCE	trans-1,2-Dichloroethene	
c-1,2-DCE	cis-1,2-Dichloroethene	
1,1,1-TCA	1,1,1-Trichloroethane	
TCE	Trichloroethene	
PCE	Tetrachloroethene	
Total Xylenes	Summation of Meta-, Pera-, and Ortho-Xylene	

The term "trace" indicates the compound was detected below the reportable quantitation limit. Quantitation limits are presented below.

Soil-Gas Water • 1.1-Dichloroethene (DCE) 0.5 ppb 0.5 ppb • trans-1,2-DCE 0.5 ppb 0.5 ppb • cis-1,2-DCE 0.5 ppb 1.0 ppb • 1,1,1-Trichloroethane (TCA) 0.05 ppb 0.05 ppb • Trichlorothene (TCE) 0.05 ppb 0.05 ppb • Tetrachloroethene (PCE) 0.05 ppb 0.05 ppb	COMPOUND	<u>QUANTITATI</u>	ON LIMITS
• Benzene 50 ppb 5.0 ppb • Toluene 50 ppb 5.0 ppb • Ethylbenzene 50 ppb 5.0 ppb • Total Xylenes 50 ppb 5.0 ppb • Total Volatiles as JP4 20 ppm 22 ppb	 trans-1,2-DCE cis-1,2-DCE 1,1,1-Trichloroethane (TCA) Trichlorothene (TCE) Tetrachloroethene (PCE) Benzene Toluene Ethylbenzene Total Xylenes 	0.5 ppb 0.5 ppb 0.5 ppb 0.05 ppb 0.05 ppb 0.05 ppb 50 ppb 50 ppb 50 ppb 50 ppb	0.5 ppb 0.5 ppb 1.0 ppb 0.05 ppb 0.05 ppb 0.05 ppb 5.0 ppb 5.0 ppb 5.0 ppb 5.0 ppb

Table 1. Sample Results (JP-4)
Sample results from November 1992 survey

Sample I.D.	Depth, ft.	JP-4 (ppm)	
1SG-1	3	< 10	
1SG-2	6	69	
1SG-3	5	32	
1SG-4	3	26	
1SG-5	5	12000	
1SG-6	5	18	
1SG-7	5	62000	
1SG-8	5	43	
1SG-9	3	55000	
1SG-10	3	14	
1SG-11	5	130	
1SG-12	5	43	
1SG-13	5	45	
1SG-14	3	< 10	
1SG-15	5	12000	
1SG-16	5	36	
1SG-17	3	19	
1SG-18	3	28	
1SG-18 Dup.	3	14	
1SG-19	5	< 10	
1SG-20	3	10	
1SG-21	5	12	
1SG-22	5	< 10	
1SG-23	5	53	
1SG-23 Dup.	5	38	
1SG-24	4	230	
1SG-25	5	180	
1SG-26	3	59	
1SG-27	3	38	
1SG-28	6	53	
1SG-29	6	12000	
1SG-30	3	100	5%
1SG-31	9	67	•
1SG-32	6	< 10	
1SG-33	6	< 10	•
1SG-34	3	9100	
1SG-35	6	13000	
1SG-36	6 6	7100 3200	
1SG-36 Dup. 1SG-37	6	1700	
16SG-1	3	1700	
1000-1	J	1 /	

Table 1. Sample Results, Con'd.

Sample results from November 1992 survey

 Sample I.D.	Depth, ft.	JP-4 (ppm)	
16SG-1	6	19	
16SG-1	9	< 10	
16SG-2	9	11	
16SG-3	9	< 10	
16SG-4	9	< 10	
16SG-5	6	< 10	
16SG-6	6	13	
16SG-7	6	< 10	
16SG-8	6	< 10	
16SG-9	6	10	
16SG-10	6	< 10	
16SG-11	6	< 10	
16SG-12	6	< 10	
9SG-13	9	< 10	
9SG-14	9	< 10	
9SG-20	9	< 10	
9SG-21	9	< 10	
9SG-25	9	< 10	

Table 2. Sample Results (Target VOCs) Sample results from November 1992 survey

M. J.			6	Res	Results are in ppb					-
Sample NoDeptn	1, I-DCE	t-1,2-DCE	c-1,2-DCE	1,1,1-TCA	TCE	PCE	Benzene	Toluene	Ethylbenzene Total Xylenes	Total Xylenes
9SG-1-9,	< 0.50	< 0.50	< 0.50	< 0.050	< 0.050	< 0.03	< 50	< 50	< 200	< 200
9SG-2-3'	< 0.50	< 0.50	< 0.50	< 0.050	< 0.050	< 0.03	< 50	< 50	< 200	< 200
9SG-2 Dup3'	< 0.50	< 0.50	< 0.50	< 0.050	< 0.050	< 0.03	< 50	< 50	< 200	< 200
9SG-2-6'	< 0.50	< 0.50	< 0.50	< 0.050	< 0.050	< 0.03	< 50	< 50	< 200	< 200
9SG-2-9,	< 0.50	< 0.50	< 0.50	< 0.050	< 0.050	< 0.03	< 50	< 50	< 200	< 200
9SG-3-3,	< 0.50	< 0.50	< 0.50	< 0.050	< 0.050	< 0.03	< 50	< 50	< 200	< 200
.9-C-3-6	< 0.50	< 0.50	< 0.50	< 0.050	< 0.050	< 0.03	< 50	< 50	< 200	< 200
.6-E-9S6	< 0.50	< 0.50	< 0.50	< 0.050	< 0.050	< 0.03	< 50	< 50	< 200	< 200
9SG-3 Dup9'	< 0.50	< 0.50	< 0.50	< 0.050	< 0.050	< 0.03	< 50	< 50	< 200	< 200
9SG-4-3.	< 0.50	< 0.50	< 0.50	< 0.050	< 0.050	< 0.03	< 50	< 50	< 200	< 200
9SG-4-6'	< 0.50	< 0.50	< 0.50	< 0.050	< 0.050	< 0.03	< 50	< 50	< 200	< 200
9SG-4-9,	< 0.50	< 0.50	< 0.50	< 0.050	< 0.050	< 0.03	< 50	< 50	< 200	< 200
.6-2-DS6	< 0.50	< 0.50	< 0.50	< 0.050	< 0.050	< 0.03	< 50	< 50	< 200	< 200
,6-9-DS6	< 0.50	< 0.50	< 0.50	< 0.050	< 0.050	< 0.03	< 50	< 50	< 200	< 200
.6-Z-9S6	< 0.50	< 0.50	< 0.50	< 0.050	< 0.050	< 0.03	< 50	< 50	< 200	< 200
.6-8- 9 S	< 0.50	< 0.50	< 0.50	< 0.050	< 0.050	< 0.03	< 50	< 50	< 200	< 200
.6-6-DS6	< 0.50	< 0.50	< 0.50	< 0.050	< 0.050	< 0.03	< 50	< 50	< 200	< 200
9SG-10-9,	< 0.50	< 0.50	< 0.50	< 0.050	< 0.050	0.038	< 50	< 50	< 200	< 200
9SG-11-9'	< 0.50	< 0.50	< 0.50	< 0.050	< 0.050	0.055	< 50	< 50	< 200	< 200
9SG-12-9'	< 0.50	< 0.50	< 0.50	< 0.050	< 0.050	< 0.03	< 50	< 50	< 200	< 200
9SG-13-9'	< 0.50	< 0.50	< 0.50	< 0.050	< 0.050	< 0.03	< 50	< 50	< 200	< 200
9SG-14-9,	< 0.50	< 0.50	< 0.50	< 0.050	< 0.050	< 0.03	< 50	< 50	< 200	< 200
9SG-15-9,	< 0.50	< 0.50	< 0.50	< 0.050	< 0.050	< 0.03	< 50	< 50	< 200	< 200
9SG-16-9,	< 0.50	< 0.50	< 0.50	< 0.050	< 0.050	< 0.03	< 50	< 50	< 200	< 200
9SG-17-18'	< 0.50	< 0.50	< 0.50	< 0.050	< 0.050	< 0.03	< 50	< 50	< 200	< 200
9SG-18-9,	< 0.50	< 0.50	< 0.50	< 0.050	< 0.050	< 0.03	< 50	< 50	< 200	< 200
9SG-19-9,	< 0.50	< 0.50	< 0.50	< 0.050	< 0.050	< 0.03	< 50	< 50	< 200	< 200
9SG-50-9,	< 0.50	< 0.50	< 0.50	< 0.050	< 0.050	< 0.03	< 50	< 50	< 200	< 200
9SG-21-9'	< 0.50	< 0.50	< 0.50	< 0.050	< 0.050	< 0.03	< 50	< 50	< 200	< 200
9SG-22-9,	< 0.50	< 0.50	< 0.50	< 0.050	< 0.050	< 0.03	< 50	< 50	< 200	< 200
9SG-23-9'	< 0.50	< 0.50	< 0.50	< 0.050	< 0.050	< 0.03	< 50	< 50	< 200	< 200
9SG-24-9'	< 0.50	< 0.50	< 0.50	< 0.050	< 0.050	< 0.03	< 50	< 50	< 200	< 200
9SG-25-9,	< 0.50	< 0.50	< 0.50	< 0.050	< 0.050	< 0.03	< 50	< 50	< 200	< 200
.6-9Z-DS6	< 0.50	< 0.50	< 0.50	< 0.050	< 0.050	< 0.03	< 50	< 50	< 200	< 200
9SG-27-9,	< 0.50	< 0.50	< 0.50	< 0.050	< 0.050	< 0.03	< 50	< 20	< 200	< 200
9SG-27 Dup9'	< 0.50	< 0.50	< 0.50	< 0.050	< 0.050	< 0.03	< 20	< 50	< 200	< 200

Table 1. JP-4 Data
Sample results from January 1993 survey

Sample I.D.	Depth, ft.	JP-4, ppm
Soil Gas		
8SG-1	3	32
8SG-1	6	< 20
8SG-1 '	9	24
8SG-2	3	21
- 8SG -3 -	6	< 20
8SG-4	9	< 20
8SG-5	9	< 20
8SG-6	3	< 20
8SG-6	6	< 20
8SG-6	9	< 20
8SG-7	6	< 20
8SG-8	6	< 20
8\$G-9	6	30
8SG-10	6	< 20
8SG-11	6	< 20
8SG-12	6	24
8SG-13	6	< 20
8SG-14	6	< 20
8SG-15	6	< 20
8SG-16	6	< 20
8SG-17	6	< 20
8SG-17	12	< 20
8SG-18	6	< 20
8SG-19	6	< 20
* 1SG-1	6	19000
** 1SG-2	6	84000
2SG-1	6	< 20
2SG-2	6	< 20
2SG-3	6	25
2SG-4	6	< 20
2SG-5	6	24
2SG-5Dup.	6	21
2SG-6	6	20
2SG-7	6	< 20
2SG-8	. 3	< 20
2SG-8	5	< 20
2SG-9	5	< 20
2SG-10	. 5.	< 20
2SG-11	5	< 20
2SG-12	5	< 20
2SG-13	5	22

^{*} taken in the area of 1SG-29 (November 1992) as a QC check

^{**} taken in the area of 1SG-36 (November 1992) as a QC check

Table 1. JP-4 Data (Con't)
Sample results from January 1993 survey

	Sample I.D.	Depth, ft.	JP-4, ppm
	2SG-14	5	47
	2SG-15	5	< 20
	2SG-16	5	< 20
	2SG-17	5	24
	2SG-18	5	< 20
	2SG-19	5	< 20
	2SG-20	5	26
	2SG-21	5	< 20
	2SG-22	5	< 20
	2SG-23	5	< 20
	2SG-24	2.5	< 20
	2SG-24	5.5	< 20
	2SG-25	5	< 20
	2SG-26	5	< 20
	2SG-27	5	< 20
	2SG-28	5	< 20
	Water		μg/L (ppb)
	1GW-1	6-9	μφι (pp8) < 22
	1GW-1	6-9	69
	1GW-2 1GW-3	6-9	< 22
	1GW-4	6-9	< 22
	1GW-5	6-9	64
	1GW-6	6-9	< 22
	1GW-7	6-9	< 22
	1GW-8	6-9	< 22
	1GW-9	6-9	23
	2GW-1	7-10	69
	2GW-2	8-11	24
	2GW-3	8-11	22
	2GW-4	9-12	< 22
	2GW-4 Dup.	9-12	< 22
	2GW-5	9-12	< 22
	2GW-6	9-12	22
	2GW-6	18-21	22
	2GW-6 Dup.	18-21	22
72	2GW-7	8-11	22
	2GW-8	8-11	< 22
	2GW-9	8-11	< 22
	2GW-10	8-11	< 22
	2GW-11	8-11	22
	2GW-12	8-11	< 22

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Table 1. JP-4 Data (Con't)

Sample results from January 1993 survey

Sample I.D.	Depth, ft.	JP-4, ppb
2GW-12 Dup.	8-11	< 22
5GW-1	6-9	< 22
5GW-2	6-9	< 22
5GW-3	5-8	< 22
5GW-4	5-8	< 22
5GW-5	8-11	39
5GW-6	8-11	< 22
5GW-7	8-11	< 22
5GW-8	8-11	< 22
5GW-9	8-11	22
5GW-10	9-12	< 22
5GW-11	8-11	< 22
5GW-12	6-9	< 22
5GW-12 Dup.	6-9	< 22
5GW-13	6-9	< 22
5GW-14	6-9	< 22
5GW-15	6-9	22
5GW-16	6-9	25000
6GW-1	112-15	4400
6GW-2	15-18	22
6GW-2 Dup.	15-18	< 22
6GW-3	15-18	25
6GW-4	15-18	110
6GW-5	17-20	27
6GW-6	11-14	65
6GW-6 Dup.	11-14	110
6GW-7	8-11	< 22
6GW-8	14-17	< 22
6GW-8 Dup.	14-17	< 22
8GW-1	11-14	< 22
8GW-1	20-23	22
8GW-2	14-17	< 22
8GW-3	14-17	< 22
8GW-3	26-29	< 22
8GW-4	14-17	< 22
8GW-5	17-20	< 22
8GW-6	14-17	< 22
8GW-6 Dup.	14-17	< 22
8GW-7	14-17	< 22
8GW-8	18-21	< 22
8GW-9	17-20	< 22
8GW-9	26-29	23

Table 1. JP-4 Data (Con't)
Sample results from January 1993 survey

	Sample I.D.	Depth, ft.	JP-4, ppb
	9GW-1	18-21	< 22
	9GW-1 Dup.	18-21	< 22
	9GW-2	18-21	< 22
	9GW-3	18-21	< 22
	9GW-3 Dup.	18-21	< 22
	9GW-4	18-21	< 22
	9GW-5	15-21	< 22
	9GW-6	18-21	23
	9GW-6 Dup.	18-21	22
	9GW-7	15-21	< 22
	9GW-8	21-24	< 22
	9GW-9	18-21	< 22
	9GW-10	18-21	< 22
_	9GW-11	18-21	< 22
13	9GW-12	18-21	< 22
	9GW-13	21-24	57
	9GW-14	18-21	< 22
	9GW-14 Dup.	18-21	< 22
	9GW-15	21-24	< 22

Table 2. Target VOC Data Sample result from January 1993 survey

					Results are in ppb	qdd				
Sample No.	1,1-DCE	t-1,2-DCE	c-1,2-DCE	1,1,1-TCA	TCE	PCE	Benzene	Toluene	Ethylbenzene	Total Xylenes
8SG-1-3'	< 0.5	< 0.5	< 0.5	< 0.05	< 0.05	< 0.05	< 50	< 50	< 50	< 50
8SG-1-6'	< 0.5	< 0.5	< 0.5	< 0.05	< 0.05	< 0.05	< 50	< 50	< 50	< 50
8SG-1-9'	< 0.5	< 0.5	< 0.5	< 0.05	< 0.05	< 0.05	< 50	< 50	< 50	< 50
8SG-2-3'	< 0.5	< 0.5	< 0.5	< 0.05	< 0.05	< 0.05	< 50	< 50	< 50	< 50
886-3-6'	< 0.5	< 0.5	< 0.5	< 0.05	< 0.05	< 0.05	< 50	< 50	< 50	< 50
8SG-4-9'	< 0.5	< 0.5	< 0.5	< 0.05	< 0.05	< 0.05	< 50	< 50	< 50	< 50
8SG-2-9,	< 0.5	< 0.5	< 0.5	< 0.05	< 0.05	< 0.05	< 50	< 50	< 50	< 50
8SG-6-3'	< 0.5	< 0.5	< 0.5	< 0.05	< 0.05	< 0.05	< 50	< 50	< 50	< 50
.9-9-9S8	< 0.5	< 0.5	< 0.5	< 0.05	< 0.05	< 0.05	< 50	< 50	< 20	< 50
.6-9-DS8	< 0.5	< 0.5	< 0.5	< 0.05	< 0.05	< 0.05	< 50	< 50	> 20	< 50
.9-Z-9-8	< 0.5	< 0.5	< 0.5	< 0.05	< 0.05	< 0.05	< 50	< 50	< 50	< 50
.9-8-58	< 0.5	< 0.5	< 0.5	< 0.05	< 0.05	< 0.05	< 50	< 50	< 50	< 50
.9-6-DS8	< 0.5	< 0.5	< 0.5	< 0.05	< 0.05	< 0.05	< 50	< 50	< 50	< 50
8SG-10-6'	< 0.5	< 0.5	< 0.5	< 0.05	< 0.05	< 0.05	< 50	< 50	< 50	< 50
8SG-11-6'	< 0.5	< 0.5	< 0.5	< 0.05	< 0.05	< 0.05	< 50	< 50	< 50	< 50
8SG-12-6'	< 0.5	< 0.5	< 0.5	< 0.05	< 0.05	< 0.05	< 50	< 50	< 50	< 20
8SG-13-6'	< 0.5	< 0.5	< 0.5	< 0.05	< 0.05	< 0.05	< 50	< 50	< 50	< 50
8SG-14-6'	< 0.5	< 0.5	< 0.5	< 0.05	< 0.05	< 0.05	< 50	< 50	< 50	< 50
8SG-15-6'	< 0.5	< 0.5	< 0.5	< 0.05	< 0.05	< 0.05	< 50	< 50	< 50	< 50
8SG-16-6'	< 0.5	< 0.5	< 0.5	< 0.05	< 0.05	< 0.05	< 50	< 50	< 50	< 50
8SG-17-6'	< 0.5	< 0.5	< 0.5	< 0.05	< 0.05	< 0.05	< 50	< 50	< 20	< 50
8SG-17-12	< 0.5	< 0.5	< 0.5	< 0.05	< 0.05	< 0.05	< 50	< 50	< 50	< 50
8SG-18-6	< 0.5	< 0.5	< 0.5	< 0.05	< 0.05	< 0.05	< 50	< 20	< 50	< 50
15G-1-6'	< 0.5	< 0.5	< 0.5	< 0.05	< 0.05	< 0.05	75000	8800	24000	5200
1SG-2-6'	< 0.5	< 0.5	< 0.5	< 0.05	< 0.05	< 0.05	11000	7100	9500	1100
2SG-1-6'	< 0.5	< 0.5	< 0.5	< 0.05	< 0.05	< 0.05	< 50	< 50	< 50	< 50
2SG-2-6'	< 0.5	< 0.5	< 0.5	< 0.05	< 0.05	< 0.05	< 50	< 50	< 50	< 50
2SG-3-6'	< 0.5	< 0.5	< 0.5	< 0.05	< 0.05	< 0.05	< 50	< 50	< 50	< 50
2SG-4-6'	< 0.5	< 0.5	< 0.5	< 0.05	< 0.05	< 0.05	< 50	< 50	< 50	< 50
2SG-5-6'	< 0.5	< 0.5	< 0.5	< 0.05	< 0.05	< 0.05	< 50	< 50	< 50	< 20
2SG-2 Dup-6'	< 0.5	< 0.5	< 0.5	< 0.05	< 0.05	< 0.05	< 50	< 50	< 50	< 50
2SG-6-6'	< 0.5	< 0.5	< 0.5	< 0.05	< 0.05	< 0.05	< 50	< 50	< 50	< 50
2SG-7-6'	< 0.5	< 0.5	< 0.5	< 0.05	< 0.05	< 0.05	< 50	< 50	< 50	< 50
2SG-8-3'	< 0.5	< 0.5	< 0.5	< 0.05	< 0.05	< 0.05	< 20	< 50	< 50	< 50

Table 2. Target VOC Data (Con't.) Sample result from January 1993 survey Results are in mb

	1		1		Results are in ppb	ddd			:	
Sample No.	1,1-DCE	t-1,Z-DCE	c-1,2-DCE	1,1,1-TCA	TCE	PCE	Benzene	Toluene	Ethylbenzene	Total Xylenes
2SG-8-5'	< 0.5	< 0.5	< 0.5	< 0.05	< 0.05	< 0.05	< 50	< 50	< 50	< 50
2SG-9-5'	< 0.5	< 0.5	< 0.5	< 0.05	< 0.05	< 0.05	< 50	< 50	< 50	< 50
2SG-10-5'	< 0.5	< 0.5	< 0.5	< 0.05	< 0.05	< 0.05	< 50	< 50	< 50	< 50
2SG-11-5'	< 0.5	< 0.5	< 0.5	< 0.05	< 0.05	< 0.05	< 50	< 50	< 50	< 50
2SG-12-5'	< 0.5	< 0.5	< 0.5	< 0.05	< 0.05	< 0.05	< 50	< 50	< 50	< 50
2SG-13-5'	< 0.5	< 0.5	< 0.5	< 0.05	< 0.05	< 0.05	< 50	< 50	< 50	< 50
2SG-14-5'	< 0.5	< 0.5	< 0.5	< 0.05	< 0.05	< 0.05	< 50	< 50	< 50	< 50
2SG-15-5'	< 0.5	< 0.5	< 0.5	< 0.05	< 0.05	< 0.05	< 50	< 50	< 50	< 50
2SG-16-5'	< 0.5	< 0.5	< 0.5	< 0.05	< 0.05	< 0.05	< 50	< 50	< 50	< 50
2SG-17-5'	< 0.5	< 0.5	< 0.5	< 0.05	< 0.05	< 0.05	< 50	< 50	< 50	< 50
2SG-18-5	< 0.5	< 0.5	< 0.5	< 0.05	< 0.05	< 0.05	< 50	< 50	< 50	< 50
2SG-19-5'	< 0.5	< 0.5	< 0.5	< 0.05	< 0.05	< 0.05	< 50	< 50	< 50	< 50
2SG-20-5	< 0.5	< 0.5	< 0.5	< 0.05	< 0.05	< 0.05	< 50	< 50	< 50	< 50
2SG-21-5'	< 0.5	< 0.5	< 0.5	< 0.05	< 0.05	< 0.05	< 50	< 50	< 50	< 50
2SG-22-5'	< 0.5	< 0.5	< 0.5	< 0.05	< 0.05	< 0.05	< 50	< 50	< 50	< 50
2SG-23-5'	< 0.5	< 0.5	< 0.5	< 0.05	< 0.05	< 0.05	< 50	< 50	< 50	< 50
2SG-24-2.5'	< 0.5	< 0.5	< 0.5	< 0.05	< 0.05	< 0.05	< 50	< 50	< 50	< 50
2SG-24-5.5	< 0.5	< 0.5	< 0.5	< 0.05	< 0.05	< 0.05	< 50	< 50	< 50	< 50
2SG-25-5'	< 0.5	< 0.5	< 0.5	< 0.05	< 0.05	< 0.05	< 50	< 50	< 50	< 50
2SG-26-5	< 0.5	< 0.5	< 0.5	< 0.05	< 0.05	< 0.05	< 50	< 50	< 50	< 50
2SG-27-5'	< 0.5	< 0.5	< 0.5	< 0.05	< 0.05	< 0.05	< 50	< 50	< 50	< 50
2SG-28-5'	< 0.5	< 0.5	< 0.5	< 0.05	< 0.05	0.21	< 50	< 20	< 50	< 50
Water										
1GW-1-6-9'	< 0.5	< 0.5	< 1.0	< 0.05	< 0.05	< 0.05	< 5.0	> 5.0	< 5.0	< 5.0
1GW-2-6-9'	< 0.5	< 0.5	< 1.0	< 0.05	< 0.05		< 5.0		Ŋ	
1GW-3-6-9'	< 0.5	< 0.5	< 1.0	< 0.05	< 0.05	< 0.05	< 5.0	< 5.0	< 5.0	< 5.0
1GW-4-6-9'	< 0.5	< 0.5	< 1.0	< 0.05	< 0.05	< 0.05	< 5.0	< 5.0	< 5.0	< 5.0
1GW-5-6-9'	< 0.5	< 0.5	< 1.0	< 0.05	< 0.05	< 0.05	< 5.0	< 5.0	< 5.0	< 5
1GW-6-6-9'	< 0.5	< 0.5	< 1.0	< 0.05	< 0.05	< 0.05	< 5.0	< 5.0	< 5.0	< 5.0
1GW-7-6-9'	< 0.5	< 0.5	< 1.0	< 0.05	< 0.05	< 0.05	< 5.0	< 5.0	< 5.0	< 5.0
1GW-8-6-9°	< 0.5	< 0.5	< 1.0	< 0.05	< 0.05	< 0.05	< 5.0	< 5.0	< 5.0	< 5.0
1GW-9-6-9'	< 0.5	< 0.5	< 1.0	< 0.05	< 0.05	< 0.05	< 5.0	< 5.0	< 5.0	< 5.0
2GW-1-7-10'	< 0.5	< 0.5	< 1.0	< 0.05	< 0.05	< 0.05	< 5.0	< 5.0	< 5.0	< 5.0

Table 2. Target VOC Data (Con't.)
Sample result from January 1993 survey

1,1-DCE 1-1,2-DCE 0-1,2-DCE 1 < 0.5 < 0.5 < 0.5 < 0.5 < 1.0 < 0.5 < 0.5 < 0.5 < 1.0 < 0.5 < 0.5 < 0.5 < 1.0 < 0.5 < 0.5 < 0.5 < 1.0 < 0.5 < 0.5 < 0.5 < 1.0 < 0.5 < 0.5 < 0.5 < 1.0 < 0.5 < 0.5 < 0.5 < 1.0 < 0.5 < 0.5 < 0.5 < 1.0 < 0.5 < 0.5 < 0.5 < 1.0 < 0.5 < 0.5 < 0.5 < 1.0 < 0.5 < 0.5 < 0.5 < 1.0 < 0.5 < 0.5 < 0.5 < 1.0 < 0.5 < 0.5 < 0.5 < 1.0 < 0.5 < 0.5 < 0.5 < 1.0 < 0.5 < 0.5 < 0.5 < 1.0 < 0.5 < 0.5 < 0.5 < 1.0 < 0.5 < 0.5 < 0.5 < 1.0 < 0.5 < 0.5 < 0.5 < 1.0 < 0.5 < 0.5 < 0.5 < 1.0 < 0.5 < 0.5 < 0.5 < 1.0 < 0.5 < 0.5 < 0.5 < 1.0 < 0.5 < 0.5 < 0.5 < 1.0 < 0.5 < 0.5 < 0.5 < 1.0 < 0.5 < 0.5 < 0.5 < 1.0 < 0.5 < 0.5 < 0.5 < 1.0 < 0.5 < 0.5 < 0.5 < 1.0 < 0.5 < 0.5 < 0.5 < 1.0 < 0.5 < 0.5 < 0.5 < 1.0 < 0.5 < 0.5 < 0.5 < 1.0 < 0.5 < 0.5 < 0.5 < 1.0 < 0.5 < 0.5 < 0.5 < 1.0 < 0.5 < 0.5 < 0.5 < 1.0 < 0.5 < 0.5 < 0.5 < 1.0 < 0.5 < 0.5 < 0.5 < 1.0 < 0.5 < 0.5 < 0.5 < 1.0 < 0.5 < 0.5 < 0.5 < 1.0 < 0.5 < 0.5 < 0.5 < 1.0 < 0.5 < 0.5 < 0.5 < 0.5 < 1.0 < 0.5 < 0.5 < 0.5 < 0.5 < 1.0 < 0.5 < 0.5 < 0.5 < 0.5 < 1.0 < 0.5 < 0.5 < 0.5 < 0.5 < 1.0 < 0.5 < 0.5 < 0.5 < 0.5 < 1.0 < 0.5 < 0.5 < 0.5 < 0.5 < 1.0 < 0.5 < 0.5 < 0.5 < 0.5 < 1.0 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 <						Results are in ppb	qdd				
11	Sample No.	1,1-DCE	t-1,2-DCE	c-1,2-DCE	1,1,1-TCA	TCE	PCE	Benzene	Toluene	Ethylbenzene	Total Xylenes
1	2GW-2-8-11'		< 0.5		< 0.05	< 0.05	< 0.05	< 5.0	< 5.0	< 5.0	< 5.0
1.5 0.5	2GW-3-8-11'				< 0.05	< 0.05	< 0.05	< 5.0	< 5.0	< 5.0	< 5.0
72. < 0.5	2GW-4-9-12'			< 1.0	< 0.05	< 0.05	< 0.05	< 5.0	< 5.0	< 5.0	< 5.0
7.	2GW-4 Dup9-12'			< 1.0	< 0.05	< 0.05	< 0.05	< 5.0	< 5.0	< 5.0	< 5.0
19-2	2GW-5-9-12'	< 0.5		< 1.0	< 0.05	< 0.05	< 0.05	< 5.0	< 5.0	< 5.0	< 5.0
0.5	2GW-6-9-12'	< 0.5		< 1.0	< 0.05	< 0.05	< 0.05	< 5.0	< 5.0	< 5.0	< 5.0
0.5	2GW-6-18-21'	< 0.5		< 1.0	< 0.05	< 0.05	< 0.05	< 5.0	< 5.0	< 5.0	< 5.0
11.	2GW-6 Dup18-2	< 0.5		< 1.0	< 0.05	< 0.05	< 0.05	< 5.0	< 5.0	< 5.0	< 5.0
-6-9'	2GW-7-8-11'			< 1.0	< 0.05	< 0.05	< 0.05	< 5.0	< 5.0	< 5.0	< 5.0
-6-9' < 0.55	2GW-8-8-11'			< 1.0	< 0.05	< 0.05	0.15	< 5.0	< 5.0	< 5.0	< 5.0
-6-9' < 0.55	2GW-9-8-11'			< 1.0	< 0.05	< 0.05	< 0.05	< 5.0	< 5.0	< 5.0	< 5.0
	2GW-10-8-11'			< 1.0	< 0.05	< 0.05	< 0.05	< 5.0	< 5.0	< 5.0	< 5.0
0.5 0.6 0.7 0.8 0.9 0.1 0.2 0.3 0.4 0.5 0.6 0.7 0.8 0.9 0.1 0.2 0.3 0.4 0.5 0.6 0.7 0.8 0.1 0.2 0.2 0.3 0.4 0.5 0.6 0	2GW-11-8-11'			< 1.0	< 0.05	< 0.05	< 0.05	< 5.0	< 5.0	< 5.0	< 5.0
0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.6 0.5 0.7 0.7 0.8 0.7 0.9 0.5 0.5 0.5 0.6 0.7 0.7 0.7 0.8 0.7 0.9 0.7 0.0 0.7 0.7 0.7 0.8 0.7 0.9 0.7 0.0 0.7 0.7 0.7 0.8 0.7 0.9 0.7 0.0 0	2GW-12-8-11'		0	< 1.0	< 0.05	< 0.05	< 0.05	< 5.0	< 5.0	< 5.0	< 5.0
6.9' < 0.5	2GW-12 Dup8-1		0	< 1.0	< 0.05	< 0.05	< 0.05	< 5.0	< 5.0	< 5.0	< 5.0
6.9' < 0.5	5GW-1-6-9'		0	< 1.0	< 0.05	< 0.05	< 0.05	< 5.0	< 5.0	< 5.0	< 5.0
6-9' < 0.5	5GW-2-6-9'			< 1.0	< 0.05	< 0.05	< 0.05	< 5.0	< 5.0	< 5.0	< 5.0
6.9'	5GW-3-5-8'			< 1.0	< 0.05	< 0.05	< 0.05	< 5.0	< 5.0	< 5.0	< 5.0
6.9' < 0.5	5GW-4-5-8'			< 1.0	< 0.05	< 0.05	< 0.05	< 5.0	< 5.0	< 5.0	< 5.0
6.9' < 0.5	5GW-5-8-11'			-	< 0.05	< 0.05	< 0.05	< 5.0	< 5.0	< 5.0	< 5.0
6.9' < 0.5	5GW-6-8-11'			< 1.0	< 0.05	< 0.05	< 0.05	< 5.0	< 5.0	< 5.0	< 5.0
6-9' < 0.5	5GW-7-8-11'			< 1.0	< 0.05	< 0.05	< 0.05	< 5.0	< 5.0	< 5.0	< 5.0
6.9' < 0.5	5GW-8-8-11'			< 1.0	< 0.05	< 0.05	< 0.05	< 5.0	< 5.0	< 5.0	< 5.0
6.9' < 0.5	5GW-9-8-11'			< 1.0	< 0.05	< 0.05	< 0.05	< 5.0	< 5.0	< 5.0	< 5.0
-6-9' < 0.5	5GW-10-9-12'			< 1.0	< 0.05	< 0.05	< 0.05	< 5.0	< 5.0	< 5.0	< 5.0
 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.7 0.8 0.9 0.7 0.7 0.7 0.8 0.9 0.1 0.9 0.7 0.7 0.7 0.7 0.8 0.9 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.2 0.3 0.4 0.4 0.5 0.7 0.8 /ul>	5GW-11-8-11'			< 1.0	< 0.05	< 0.05	< 0.05	< 5.0	< 5.0	< 5.0	< 5.0
 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 <	5GW-12-6-9'			< 1.0	< 0.05	< 0.05	< 0.05	< 5.0	< 5.0	< 5.0	< 5.0
0.5 0	5GW-12 Dup6-9'	٧		< 1.0	< 0.05	< 0.05	< 0.05	< 5.0	< 5.0	< 5.0	< 5.0
 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 <	5GW-13-6-9'			< 1.0	< 0.05	< 0.05	< 0.05	< 5.0	< 5.0	< 5.0	< 5.0
 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 	5GW-14-6-9'			< 1.0	< 0.05	< 0.05	< 0.05	< 5.0	< 5.0	< 5.0	< 5.0
 < 0.5 < 0.5 < 0.10 < 0.5 < 0.10 < 0.5 < 0.5 	5GW-15-6-9'			< 1.0	< 0.05	< 0.05	< 0.05	< 5.0	< 5.0	< 5.0	< 5.0
< 0.5 < 0.5 < 1.0 <	5GW-16-6-9'			< 1.0	< 0.05	0.02	0.15	1400	480	370	280
	6GW-1-12-15'	< 0.5	< 0.5	< 1.0	< 0.05	1.30	< 0.05	270	120	110	27
6GW-2-15-18' < 0.5 < 0.5 < 1.0 < 0	6GW-2-15-18'	< 0.5		< 1.0	< 0.05	< 0.05	< 0.05	< 5.0	< 5.0	< 5.0	< 5.0

Table 2. Target VOC Data (Con't.)
Sample result from January 1993 survey
Results are in pob

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F 17.2-DCE						Results are in ppb	qdd				
0.5 0		,1-DCE	t-1,2-DCE	c-1,2-DCE	۲,	TCE	PCE	Benzene	Toluene	Ethylbenzene	Total Xylenes
0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.0 0.6 0.5 0.5 0.0 0.6 0.5 0.5 0.0 0.6 0.5 0.5 0.0 0.6 0.6 0.0 0.0 0.6 0	.2 Dup15-1				1		< 0.05	< 5.0	< 5.0	< 5.0	< 5.0
0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.0 0.5 0.5 0.5 0.0 0.6 0.5 0.5 0.0 0.6 0.5 0.0 0.0 0.6 0.5 0.0 0.0 0.6 0.6 0.0 0.0 0.6 0	3-15-18'						< 0.05	< 5.0	< 5.0	< 5.0	< 5.0
0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.6 0.5 0.6 0.5 0.6 0.5 0.6 0.5 0.6 0.5 0.7 0.7 0.7 0.7 0.7 0.7 0.7 0.7 0.8 0.7 0.9 0.7 0.0 0.7 0.7 0.7 0.8 0.7 0.9 0.7 0.0 0.7 0.7 0.7 0.8 0.7 0.9 0.7 0.0 0	4-15-18						< 0.05	< 5.0	< 5.0	< 5.0	< 5.0
0.5 0.5 0.5 0	-5-17-20'			< 1.0		< 0.05	< 0.05	< 5.0	< 5.0	< 5.0	< 5.0
0.5 0.5 0.6 0	6-11-14'			< 1.0		< 0.05	< 0.05	< 5.0	< 5.0	< 5.0	< 5.0
0.5 0.6 0.6 0.7 0				< 1.0			< 0.05	< 5.0	< 5.0	< 5.0	< 5.0
0.5 0.6 0.6 0.7 0	-7-8-11.			< 1.0		< 0.05	< 0.05	< 5.0	< 5.0	< 5.0	< 5.0
0.5 0.5 0.5 0	8-14-17	0	0	< 1.0		< 0.05	< 0.05	< 5.0	< 5.0	< 5.0	< 5.0
0.5 0.5 0.5 0	·8 Dup14-1	0		< 1.0			< 0.05	< 5.0	< 5.0	< 5.0	< 5.0
0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.6 0.5 0.7 0.5 0.7 0.7 0.7 0.7 0.7 0.7 0.7 0.7 0.7 0.7 0.7 0.7 0.7 0.7 0.7 0.7 0.7 0.7 0.7 0.7 0.7 0.7 0.7 0.7 0.7 0.7 0.7 0.7 0.7 0.7 0.7 0	1-11-14			< 1.0		< 0.05	< 0.05	< 5.0	< 5.0	< 5.0	< 5.0
0.5 0.5 0.6 0.5 0.7 0.7 0.7 0.7 0.7 0.7 0.7 0.7 0.7 0.7 0.7 0.7 0.7 0.7 0.7 0.7 0.7 0	.1-20-23'			< 1.0		< 0.05	< 0.05	< 5.0	< 5.0	< 5.0	< 5.0
0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.6 0.5 0.7 0.7 0.7 0.7 0.7 0.7 0.7 0.7 0.7 0.7 0.7 0.7 0.7 0.7 0.7 0.7 0.7 0.7 0.7 0.7 0.7 0.7 0.7 0.7 0.7 0.7 0.7 0.7 0.7 0.7 0.7 0.7 0.7 0.7 0.7 0	.2-14-17'		Ö	< 1.0			< 0.05	< 5.0	< 5.0	< 5.0	< 5.0
0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.6 0.5 0.7 0.7 0.7 0.7 0.7 0.7 0.7 0.7 0.7 0.7 0.7 0.7 0.7 0.7 0.7 0.7 0.7 0.7 0.7 0.7 0.7 0.7 0.7 0.7 0.7 0.7 0.7 0.7 0.7 0.7 0.7 0.7 0.7 0.7 0.7 0	3-14-17			< 1.0		< 0.05	< 0.05	< 5.0	< 5.0	< 5.0	< 5.0
0.5 0.6 0.7 0.7 0.7 0.8 0.9 0.0 0	.3-26-29'			< 1.0		< 0.05	< 0.05	< 5.0	< 5.0	< 5.0	< 5.0
0.5 0	4-14-17			< 1.0		< 0.05	0.07	< 5.0	< 5.0	< 5.0	< 5.0
0.5 0	5-17-20			< 1.0			< 0.05	< 5.0	< 5.0	< 5.0	< 5.0
0.5 0	6-14-17			< 1.0			< 0.05	< 5.0	< 5.0	< 5.0	< 5.0
< 0.5	6 Dup14-1			< 1.0		< 0.05	< 0.05	< 5.0	< 5.0	< 5.0	< 5.0
< 0.5	7-14-17			< 1.0		< 0.05	< 0.05	< 5.0	< 5.0	< 5.0	< 5.0
< 0.5	8-18-21			< 1.0		< 0.05	< 0.05	< 5.0	< 5.0	< 5.0	< 5.0
6.0.5 6.0.5 <td< td=""><td>.9-17-20</td><td></td><td></td><td>< 1.0</td><td></td><td>< 0.05</td><td>< 0.05</td><td>< 5.0</td><td>< 5.0</td><td>< 5.0</td><td>< 5.0</td></td<>	.9-17-20			< 1.0		< 0.05	< 0.05	< 5.0	< 5.0	< 5.0	< 5.0
8-2	.9-26-29'			< 1.0		< 0.05	< 0.05	< 5.0	< 5.0	< 5.0	< 5.0
8.2	1-18-21			< 1.0		< 0.05	< 0.05	< 5.0	< 5.0	< 5.0	< 5.0
Compared to the compared to	.1 Dup18-2			< 1.0			< 0.05	< 5.0	< 5.0	< 5.0	< 5.0
8-2	.2-18-21			< 1.0			< 0.05	< 5.0	< 5.0	< 5.0	< 5.0
8.2	3-18-21			< 1.0			< 0.05	< 5.0	< 5.0	< 5.0	< 5.0
< 0.5	3 Dup18-2			< 1.0			< 0.05	< 5.0	< 5.0	< 5.0	< 5.0
C 0.5	4-18-21		o.	< 1.0		< 0.05	< 0.05	< 5.0	< 5.0	< 5.0	< 5.0
1. < 0.5	5-18-21'			< 1.0		< 0.05	< 0.05	< 5.0	< 5.0	< 5.0	< 5.0
18.2	6-18-21			< 1.0		< 0.05	< 0.05	< 5.0	< 5.0	< 5.0	< 5.0
. < 0.5	6 Dup18-2			-		< 0.05	< 0.05	< 5.0	< 5.0	< 5.0	< 5.0
. < 0.5 < 0.5 < 1.0 < 0.05 <	7-18-21			< 1.0		< 0.05	< 0.05	< 5.0	< 5.0	< 5.0	< 5.0
· · · · · · · · · · · · · · · · · · ·	8-21-24			_		< 0.05	< 0.05	< 5.0	< 5.0	< 5.0	< 5.0
	9-18-21	< 0.5	< 0.5	< 1.0	< 0.05	< 0.05	0.08	< 5.0	< 5.0	< 5.0	< 5.0

Table 2. Target VOC Data (Con't.) Sample result from January 1993 survey

					Results are in ppb	qdd				
Sample No.	1,1-DCE	1,1-DCE t-1,2-DCE	c-1,2-DCE	1,1,1-TCA	TCE	PCE	Benzene	Toluene	Ethylbenzene	Total Xylenes
9GW-10-18-21'	< 0.5	< 0.5	< 1.0	< 0.05	< 0.05	< 0.05	< 5.0	< 5.0	< 5.0	< 5.0
9GW-11-18-21	< 0.5	< 0.5	< 1.0	< 0.05	< 0.05	0.07	< 5.0	< 5.0	< 5.0	< 5.0
9GW-12-18-21	< 0.5	< 0.5	< 1.0	< 0.05	< 0.05	< 0.05	< 5.0	< 5.0	< 5.0	< 5.0
9GW-13-21-24'	< 0.5	< 0.5	< 1.0	< 0.05	< 0.05	< 0.05	< 5.0	< 5.0	< 5.0	< 5.0
9GW-14-18-21	< 0.5	< 0.5	< 1.0	< 0.05	< 0.05	< 0.05	< 5.0	< 5.0	< 5.0	< 5.0
9GW-14 Dup18-	< 0.5	< 0.5	< 1.0	< 0.05	< 0.05	< 0.05	< 5.0	< 5.0	< 5.0	< 5.0
9GW-15-21-24'	< 0.5	< 0.5	< 1.0	< 0.05	< 0.05	< 0.05	< 5.0	< 5.0	< 5.0	< 5.0

Table 3. Laboratory Duplicates Sample results from November 1992 survey

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JP-4, ppm	19	13	38%	< 10	< 10	0	< 10	< 10	0	7100	7300	3%
Sample I.D.	1SG-17	Lab Duplicate	RPD	1SG-22	Lab Duplicate	RPD	16SG-4	Lab Duplicate	RPD	1SG-36	Lab Duplicate	RPD

					Res	Results are in ppb	qaa			
Sample I.D. 1,1-DCE t-1,2-DCE	1,1-DCE		c-1,2-DCE 1,1,1-TCA	1,1,1-TCA	TCE	PCE	Benzene Toluene	Toluene	Ethylbenzene Total Xylenes	Total Xylenes
9SG-7	< 0.50	< 0.50	< 0.50	< 0.050	< 0.050	< .030	< 50	< 50	< 200	< 200
Lab Duplicate	< 0.50	< 0.50	< 0.50	< 0.050	< 0.050	< .030	< 50	< 50	< 200	< 200
RPD	0	0	0	0	0	0	0	0	0	0
9SG-26	< 0.50	< 0.50	< 0.50	< 0.050	< 0.050	< .030	< 50	> 20	< 200	< 200
Lab Duplicate	< 0.50	< 0.50	< 0.50	< 0.050	< 0.050	< .030	< 50	< 50	< 200	< 200
RPD	0	0	0	0	0	0	0	0	0	0

Table 3. QA/QC Data Sample results from January 1993 survey

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Soil-Gas Lab Duplicates Sample No. 1,1-DCE	Suplicates 1,1-DCE	t-1,2-DCE	uplicates 1,1-DCE t-1,2-DCE c-1,2-DCE 1,1,1-TCA	1,1,1-TCA	TCE	PCE	Benzene	Toluene	Ethylbenzene Total Xylenes	tal Xylenes
2SG-27-5	< 0.5	< 0.5	< 0.5	< 0.05	< 0.05	< 0.05	< 50	< 50	< 50	< 50
Lab Duplicate	< 0.5	< 0.5	< 0.5	< 0.05	< 0.05	< 0.05	> 50	< 50	< 50	< 50
RPD	0	0	0	0	0	0	0	0	0	0
2SG-28-5	< 0.5	< 0.5	< 0.5	< 0.05	< 0.05	0.20	< 50	< 50	< 50	< 50
Lab Duplicate	< 0.5	< 0.5	< 0.5	< 0.05	< 0.05	0.20	< 50	< 50	< 50	< 50
RPD	0	0	0	0	0	0	0	0	0	0
8SG-19	< 0.5	< 0.5	< 0.5	< 0.05	< 0.05	< 0.05	< 50	< 50	< 50	< 50
Lab Duplicate	< 0.5	< 0.5	< 0.5	< 0.05	< 0.05	< 0.05	< 50	< 50	< 50	< 50
RPD	0	0	0	0	0	0	0	0	0	0
8SG-1-3'	< 0.5	< 0.5	< 0.5	< 0.05	< 0.05	< 0.05	< 50	< 50	< 50	< 50
Lab Duplicate	< 0.5	< 0.5	< 0.5	< 0.05	< 0.05	< 0.05	< 20	< 50	< 50	< 50
RPD	0	0	0	0	0	0	0	0	0	0
2SG-2	< 0.5	< 0.5	< 0.5	< 0.05	< 0.05	< 0.05	< 50	< 50	< 50	< 50
Lab Duplicate	< 0.5	< 0.5	< 0.5	< 0.05	< 0.05	< 0.05	< 20	< 50	< 50	< 50
RPD	0	0	0	0	0	0	0	0	0	0
2SG-22	< 0.5	< 0.5	< 0.5	< 0.05	< 0.05	< 0.05	< 50	< 50	< 50	< 50
Lab Duplicate	< 0.5	< 0.5	< 0.5	< 0.05	< 0.05	< 0.05	< 20	< 50	< 50	< 50
RPD	0	0	0	0	0	0	0	0	0	0
Water Lab Duplicates	icates									
6-W5	< 0.5	< 0.5	< 1.0	< 0.05	< 0.05	< 0.05	< 5.0	< 5.0	< 5.0	< 5.0
Lab Duplicate	< 0.5	< 0.5	< 1.0	< 0.05	< 0.05	< 0.05	< 5.0	< 5.0	< 5.0	< 5.0
RPD	0	0	` •	0	0	0	0	0	0	0

Table 3. QA/QC Data (Con't.) Sample results from January 1993 survey

	1		Re	Results are in ppb						
No.	1,1-DCE	1,1-DCE t-1,2-DCE	c-1,2-DCE	1,1,1-TCA	TCE	PCE	Benzene	Toluene	Ethylbenzene	Ethylbenzene Total Xylenes
1GW-2	< 0.5	< 0.5	< 1.0	< 0.05	< 0.05	< 0.05	< 5.0	< 5.0	< 5.0	< 5.0
Lab Duplicate	< 0.5	< 0.5	< 1.0	< 0.05	< 0.05	< 0.05	< 5.0	< 5.0	< 5.0	< 5.0
RPD	0	0	0	0	0	0	0	0	0	0
1GW-3	< 0.5	< 0.5	< 1.0	< 0.05	< 0.05	< 0.05	> 5.0	\ 0.13	۸ 0	\ L
Lab Duplicate	< 0.5	< 0.5	< 1.0	< 0.05	< 0.05	< 0.05	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	, /) \ \ \
RPD	0	0	0	0	0			0	0 0	9,0
1GW-8	< 0.5	< 0.5	< 1.0	< 0.05	< 0.05	< 0.05	< 5.0	\ 51.0	> 50 50	> 50
Lab Duplicate	< 0.5	< 0.5	< 1.0	< 0.05	< 0.05	< 0.05	< 5.0	< 5.0	< 5.0	< 5.0
RPD	0	0	0	0	0	0	0	0	0	0
2GW-1	< 0.5	< 0.5	< 1.0	< 0.05	< 0.05	< 0.05	< 5.0	< 5.0	< 5.0	× 5.0
Lab Duplicate	< 0.5	< 0.5	< 1.0	< 0.05	< 0.05	< 0.05	< 5.0	< 5.0	< 5.0	< 5.0
RPD	0	0	0	0	0	0	0	0	0	0
2GW-4	< 0.5	< 0.5	< 1.0	< 0.05	< 0.05	< 0.05	< 5.0	< 5.0	< 5.0	× 20
Lab Duplicate	< 0.5	< 0.5	< 1.0	< 0.05	< 0.05	< 0.05	< 5.0	< 5.0	< 5.0	< 5.0
RPD	0	0	0	0	0	0	0	0	0	0
2GW-6	< 0.5	< 0.5	< 1.0	< 0.05	< 0.05	< 0.05	< 5.0	< 5.0	< 5.0	< 5.0
Lab Duplicate	< 0.5	< 0.5	< 1.0	< 0.05	< 0.05	< 0.05	< 5.0	< 5.0	< 5.0	< 5.0
RPD	0	0	0	0	0	0	0	0	0	0
9GW-1	< 0.5	< 0.5	< 1.0	< 0.05	< 0.05	< 0.05	< 5.0	< 5.0	< 5.0	< 5.0
Lab Duplicate	< 0.5	< 0.5	< 1.0	< 0.05	< 0.05	< 0.05	< 5.0	< 5.0	< 5.0	< 5.0
RPD	0	0	0	0	0	0	0	0	0	0
9GW-2	< 0.5	< 0.5	< 1.0	< 0.05	< 0.05	< 0.05	< 5.0	< 5.0	< 5.0	< 5.0
Lab Duplicate	< 0.5	< 0.5	< 1.0	< 0.05	< 0.05	< 0.05	< 5.0	< 5.0	< 5.0	< 5.0
RPD	0	0	0	0	0	0	0	0	0	0

Table 3. QA/QC Data (Con't.) Sample results fromJanuary 1993 survey

Results are in ppb

Sample No.	1,1-DCE	t-1,2-DCE	1,1-DCE t-1,2-DCE c-1,2-DCE 1,1,1-TCA	1,1,1-TCA	TCE	PCE	Benzene	Toluene	Ethylbenzene Total Xylenes	Fotal Xylenes
9GW-4	< 0.5	< 0.5	< 1.0	< 0.05	< 0.05	< 0.05	< 5.0	< 5.0	< 5.0	< 5.0
Lab Duplicate	< 0.5	< 0.5	< 1.0	< 0.05	< 0.05	< 0.05	< 5.0	< 5.0	< 5.0	< 5.0
RPD	0	0	0	0	0	0	0	0	0	0
Water Matrix Spikes	ikes									
2GW-7	< 0.5	< 0.5	< 1.0	< 0.05	< 0.05	< 0.05	< 5.0	< 5.0	< 5.0	< 5.0
2GW-7 spike	1.8	2.3	2.7	0.11	0.22	0.14	8.9	6.2	4.7	5.4
Amount Added	1.9	1.9	1.9	0.19	0.19	0.19	9.5	9.5	9.5	9.5
% Recovery	96	123	144	28	116	74	11	65	49	22
8GW-3	< 0.5	< 0.5	< 1.0	< 0.05	< 0.05	< 0.05	< 5.0	< 5.0	< 5.0	< 5.0
8GW-3 Spike	2.1	2.7	3.0	0.13	0.25	0.17	8.0	7.3	5.2	6.4
Amount Added	1.9	1.9	1.9	0.19	0.19	0.19	9.5	9.5	9.5	9.5
% Recovery	111	142	158	89	132	68	84	77	55	67
9-W98	< 0.5	< 0.5	< 1.0	< 0.05	< 0.05	< 0.05	< 5.0	< 5.0	< 5.0	< 5.0
8GW-6 Spike	1.8	2.3	2.8	0.10	0.22	0.12	7.0	6.3	4.6	5.6
Amount Added	1.9	1.9	1.9	0.19	0.19	0.19	9.5	9.5	9.2	9.5
% Recovery	95	121	147	53	116	63	74	99	48	29
2GW-5	< 0.5	< 0.5	< 1.0	< 0.05	< 0.05	< 0.05	< 5.0	< 5.0	< 5.0	< 5.0
2GW-5 Spike	1.8	2.3	2.8	0.10	0.22	0.13	6.8	6.2	4.6	5.4
Amount Added	1.9	1.9	1.9	0.19	0.19	0.19	9.5	9.5	9.5	9.2
% Recovery	95	121	147	53	116	89	11	65	48	57
9GW-3	< 0.5	< 0.5	< 1.0	< 0.05	< 0.05	< 0.05	< 5.0	< 5.0	< 5.0	< 5.0
9GW-3 Spike	1.3	1.7	2.4	0.09	0.25	0.11	7.3	6.4	4.2	5.0
Amount Added	1.9	1.9	1.9	0.19	0.19	0.19	9.5	9.5	9.5	9.2
% Recovery	89	68	126	47	132	28	77	29	44	23

Sample results from January 1993 survey Table 3. QA/QC Data (Con't.)

Results are in ppb

Sample No. 1,1-DCE t-1,2-DCE	1,1-DCE	t-1,2-DCE	c-1,2-DCE 1,1,1-TCA	1,1,1-TCA	TCE	PCE	Benzene Toluene	Toluene	Ethylbenzene Total Xylenes	al Xvienes
9GW-11	< 0.5	< 0.5	< 1.0	< 0.05	< 0.05	< 0.05	< 5.0	< 5.0		< 5.0
9GW-11 Spike	1.2	1.3	2.0	0.07	0.22	0.14				4.4
Amount Added	1.9	1.9	1.9	0.19	0.19	0.19	9.5	9.2	9.6	6.6
% Recovery	63	89	105	37	116	74		26		46
9GW-12	< 0.5	< 0.5		< 0.05	< 0.05	< 0.05	< 5.0	< 5.0	V	> 0.13
9GW-12 Spike	1.2	1.5	2.2	0.08	0.23	0.11		5.8		4.7
Amount Added	1.9	1.9	1.9	0.19	0.19	0.19		9.5		9.5
% Recovery	63	79	116	42	121	28		61	43	49
Equipment Rinseate Blanks	eate Blanks									
EB-1	< 0.5	< 0.5	< 1.0	< 0.05	< 0.05	< 0.05	< 5.0	< 5.0	٧	< 5.0
EB-2	< 0.5	< 0.5	< 1.0	< 0.05	< 0.05	< 0.05	٧	< 5.0	< 5.0	< 5.0
EB-3	< 0.5	< 0.5	< 1.0	< 0.05	< 0.05	< 0.05	< 5.0	< 5.0	٧	< 5.0
EB-4	< 0.5	< 0.5	< 1.0	< 0.05	< 0.05	< 0.05	٧	< 5.0	٧	< 5.0
EB-5	< 0.5	< 0.5	< 1.0	< 0.05	< 0.05	< 0.05	< 5.0	< 5.0	٧	< 5.0

Laboratory Blanks All instrument, syringe, vial and syringe blanks were below reporting limits.

Appendix E: Analytical Results; Onsite Screening

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Explanation

t-1,2-DCE	trans-1,2-Dichloroethene
c-1,2-DCE	cis-1,2-Dichloroethene
TCE	Trichloroethene
PCE	Tetrachloroethene
ЕВ	Ethylbenzene
M/P-Xylene	Summation of Meta- and Pera- Xylene
O-Xylene	Ortho-Xylene

Samples in this Appendix are to be denoted as follows;

Suffix-Sample ID ending	Meaning
A.B,C, ect.	indicate a soil sample
AW,BW,CW, etc. and H1,H2,H3, etc.	indicate groundwater samples collected utilizing a Hydro-punch
AA,BB,CC, etc.	indicate groundwater samples collected after development and purge utilizing a bailer.
AHA,AHB,AHC, etc.	indicate a sediment sample collected utilizing a hand auger

Note: QA and ER samples correspond to sampling activities on that date and are site specific.

Analytical Results from On-Site Field GC Alpena CRTC, Alpena MI UNITS PPb

SAMPLE ID	t-1,2-DCE	t-1,2-DCE c-1,2-DCE Benzene	Benzene	TCE	Toluene	PCE	EB	m/p-Xylene o-Xylene Depth	o-Xylene) Depth	Matrix	Date
P1B12A	ě	Q.	6 E	CN CN	QN QN	ğ	C.N.	ΩN	Q	0-2	SOIL	08/26/93
P1B13A	QN	QN QN	ĕ	ę,	QN Q	QN CN	Q.	QN	Ð	0-2	SOIL	08/26/93
P1B13B	QX QX	QN Q	C N	CN	Ę,	Q.	GN CN	QN QN	Q.	2-4	SOIL	08/26/93
P1B4A	QN	QN	S.	CN CN	MD	Q.	Q.	ND CN	ē	0-2	SOIL	08/25/93
P1B5A	QN	QN Q	Q.	Œ	NO CM	QN	Q.	QN Q	ð	0-2	SOIL	08/25/93
PIBSA LABDUP	QN	QN	Đ.	Ç.	Z	R	Q.	QN QN	Q	0-2	SOIL	08/25/93
P1B5B	QN	QN	Ę.	Q.	QN	QN QN	æ	Q.	QN QN	2-4	SOIL	08/25/93
P1B6A	QN QN	QN Q	ę,	QN Q	QN QN	QN Qu	£	QN CN	Q.	0-2	SOIL	08/25/93
P1B6B	Q.N	QN QN	ÇŞ.	ę,	CIN	QN	Ð	Q.N	ě	2-4	SOIL	08/25/93
P1B7A	QN	QN	Ç.	QN	QN QN	Q	ę,	QN Q	œ G	0-2	SOIL	08/25/93
P1B7B	Q.	NO ON	Ç.	CN.	ΩN	Q.	Q.	QN QN	£	2-4	SOIL	08/25/93
P1B8A	Q.	ę,	Q.	CZ.	QN CN	Q.	Ð	QN CN	Š	2-4	SOIL	08/25/93
P1B9A	ę,	QN	Č.	Č.	C Z	Q.	άÑ	Q.N	QN Qu	0-2	SOIL	08/25/93
P1B9B	Q.	QN.	£	£	CN	QN	Ð	QN.	ē.	2-4	SOIL	08/25/93
PIMMIOA	ВМ	Q.	BMDL	Q.	C.W	Q	Q.	QN	ě	4-6	SOIL	08/29/93
PIMMIOAA LAB DUP	ę.	ę,	CK CK	Č.	Q.	Q.	QN	ę,	Ð	33	SOIL	69/60/60
PIMMIOAA LAB DUP	Q.	Q.	CK CK	Q.	CN CN	Q.	Q.	Q.	QN Qu	m	SOIL	09/09/93
PIMMIOAW	Q.	QN	Q.	Q.	C _M	ğ	Q	Č.	CN	E	WATER	08/29/93
PIMM10B	81	Q	304	Q.	ę.	g	ě	Q.N	Q.	8-9	SOIL	08/29/93
P1MW10BB	Ç.	Q.	Č.	Č.	Č.	Q	Q.	Q.	Ç.	4	WATER	08/29/93
PLMWIOBB FIELD DUP	Q.	Ę¥	ě	€.	Đ.	ę,	Q.	QN Qu	Đ.	4	WATER	08/29/93
PIMWIOBW	Ę	Ę	ę,	£	G Z	Q.	ě	QN Q	ě	20	WATER	08/30/93
PIMMIOC	ВМ	Ç.	472	ę,	Ę.	ğ	Č.	QN CN	N Q	8-10	SOIL	08/29/93
PIMWIOC FIREDDUP	7	Q.	518	QN QN	CN CN	S.	QN QN	QN QN	£	8-10	SOIL	08/29/93
PIMW10D	ę,	Q.	ę.	Q.	GN CN	ĕ	æ	QN	CN	10-12	SOIL	08/29/93
PIMMIIA	Q.	ę.	Ð	ě	Ç.	Ę	CN	QN	ğ	1-3	SOIL	08/30/93
PIMMIIAW	Ç.	QN QN	ę	£	6	Q	Q.	Q _N	GN CN	15	WATER	08/30/93
PIMMIIB	Ę.	ę.	Q.	Q.	QN QN	ğ	Q.	NO CM	Q.	7-9	SOIL	08/30/93
PIMW11BB	ę,	e e	ξ. Q.	QN Q	Q.	ę,	Q.	QN	ę,	4	WATER	66/80/60
PIMMIIC	ę,	QN QN	QN	QN QN	QN	ę,	Ę¥	QN QN	Ð	9-11	SOIL	08/30/93
PIMMIID	ę,	QN QN	QN QN	QN Qu	Q.	Ę	QN QN	CZ CZ	Q.	11-13	SOIL	08/30/93
P1MM12A	QN	QN QN	ě	ę,	QN QN	ğ	Ę.	Ę,	ð	5-7	SOIL	66/80/60
P1MW12B	Q.	Q.	Č.	QN QN	₽ Q	QN	QN QN	G.	Ę¥	7-9	SOIL	66/80/60

Analytical Results from On-Site Field GC Alpena CRTC, Alpena MI UNITS ppb

PAGE

SAMPLE ID	t-1,2-DCE	t-1,2-DCE c-1,2-DCE Benzene		TCE	Toluene	PCE	EB	m/p-Xylene o-Xylene Depth	o-Xylene	Depth	Matrix	Date
P1MW12C	Q.	Q.	QN	Š	N CN	Ð	ě	Q	6X	9-11	SOIL	09/08/93
P1MW12D	QN	QN.	S S	S S	QN Qu	ğ	Q _N	CN	ğ	11-13	SOIL	09/08/93
PIMWI2D LAB DUP	QN	QN QN	ę,	Q	Ęģ.	₽ Q	Ę	CN	ě	11-13	SOIL	66/80/60
PIMW12E	QN	Q.	ę,	Š	ON O	ğ	Ğ	Q.	ě	13-15	SOIL	09/08/93
PIMMISA	ę	Q.	£	ę	Ç.	S.	ę,	CN CN	Ę.	7-9	SOIL	66/60/60
P1MW13AW	Q.	Q.	Č.	Q	Q.	₽.	Ð	QN QN	R	9	WATER	66/80/60
PIMWI3B	QN	ę,	QN QN	Q.	Č.	ğ	ğ	GN CN	ě	9-11	SOIL	66/60/60
P1MM13C	£	ě.	Q.	Q.	ę,	ğ	ğ	QN QN	ę,	11-13	SOIL	66/60/60
PIMWI3D	Ç.	ę,	Q.	Q.	ě	QN Qu	ğ	ę,	ę,	13-15	SOIL	66/60/60
PLAW13D LAB DUP	Q.	QN CN	QN	QN	QN QN	ğ	QN Qu	CN CN	QN Qu	13-15	SOIL	66/60/60
PIMWI3ERI	£	Đ.	QN Qu	QN Qu	Q	S.	Q.	Ę	Č.	QA	WATER	09/09/93
PIMWI3ERZ	Č.	Q.	Ę,	ě	Q	ğ	Ç.	CN CN	ę,	8	WATER	66/60/60
P1MW14AW	ę.	Ę.	Š.	C N	Q.	Ę.	Ę	Q	S	25	WATER	09/11/93
PIMWI4AW FIELDDUP	Ę	Ę¥	ě	QN QN	Ę,	G.	Q.	ę,	ğ	25	WATER	09/11/93
PIMWI4AW LABDUP.	Ç.	Q.	Ç,	QN Qu	ě	Č.	QN	Q.	Q.	25	WATER	09/11/93
PIMMIAW	17	7	44	77	4	28	103	348	Q.	7	WATER	08/24/93
PIMMIBW	Q.	QN QN	ě.	Q _N	ę,	Č.	Č.	QN	Ð	17	WATER	08/24/93
PIMMIBW FIREDDUP	ğ	ğ	M	QN QN	ξ.	Č.	ě	QN QN	Q.	17	WATER	08/24/93
PIMWIBW LABDUP	Q.	ğ	Q	Ę¥	Q.	Q.	ę,	ě	Q.	17	WATER	08/24/93
PIMMICW	Q.	ğ	BMDL	QN QN	Q.	Ę.	ě	QN QN	ě	31	WATER	08/24/93
PIMMIER	Q.	QX.	Q.	S.	B	ę	Q.	Ç.	ğ	δA	WATER	08/24/93
PIMWZA	Q.	QN QN	ě	S.	Q.	Q.	£	Č.	S S	7	SOIL	09/08/93
PIMWZAA	7	CN CN	Q	BMDL	9	S S	ę	Č.	S S	4	WATER	08/30/93
PIMWZAW	NO ON	Q.	Q	Q.	Q.	Ę.	ę,	Q.	QX QX	7	WATER	08/26/93
PIMWZAW	Q.	QN QN	Q	ğ	Q.	QN QN	CN CN	QN	ę,	7	WATER	09/08/93
PIMM3AW	QN QN	e e	Q	16	56	Ę,	Q.	Q.	Q.	7	WATER	08/26/93
P1MW4AA	ē	Q.	ě	ě	Q.	ě	N C	N O	ğ	3	WATER	08/30/93
P1MW4AW	Q.	ę,	Q	Q.	Ð	ē	Ð	CN CN	ę,	7	WATER	08/27/93
PIMW4AW LABDUP.	ě	ě	ę.	Q.	Q.	Q	Q.	Q.	Q.	7	WATER	08/27/93
PIMWSA	ě	QN QN	ND QN	MD	ę.	ě	Q.	QN QN	S S	1-3	SOIL	08/28/93
PIMWSAW	ě	ě	QN Qu	Ę	S S	Q.	ę.	QN QN	ę,	9	WATER	08/28/93
PIMWSAW LABDUP	ě	Q.	Q.	Q.	Q.	ę,	Q.	CN CN	N _O	9	WATER	08/28/93
PIMWGA	ě	ě	Ç.	ę.	ę	Ę	S.	QN Q	Ę.	1-3	SOIL	08/28/93

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UNITS ppb

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OT SHAKING ID	E-1,2-DCE	c-1,z-DCB C-1,Z-DCB Benzene	Benzene	NO.	Toluene	PCE	EB	m/p-Xylene o-Xylene Depth	o-Xylen	e Depth	Matrix	Date
PIMMEA LABDUP.	Q.	Q.	Q _N	QN	CN	Ę.	Q	Ę,	6	1-3	SOIL	08/28/93
PIMWGAA	Q.	31	54	46	QN C	20	199	437	£	4	WATER	08/30/93
Plmwgaw	ğ	QN QN	QN QN	QN Q	Q.N	QN CN	Ę¥	CI _N	Q.	v	WATER	08/28/93
PIMWGB	ð	14	882	144	Č.	ę,	1776	4436	Q.	9-11	SOIL	08/29/93
P1MW7A	Ð	ę,	QN	Q.	QN	Ę	Q.	Q	Q.	1-3	SOIL	08/28/93
P1MW7AW	QN Qu	NO CM	QN QN	Ç <u>N</u>	C.	QN Q	Q.	Q.	ě	v	WATER	08/28/93
PIMW8A	QN Qu	Q.	QN CN	G.	CN	CN CN	QN	Q.	Q.	1-3	SOIL	08/29/93
PIMW8A	QN QN	20	328	Ę.	QN	MD	372	1160	Q	1-3	SOIL	08/30/93
PIMWBAW	QN	ē.	QN	Q.	QN QN	NO ON	CN	Q.	QN QN	9	WATER	08/28/93
PIMM8C	10	QN QN	774	Q.	QN	Q.	QV.	QN QN	Q.	9-11	SOIL	08/30/93
PIMW8D	Ę	ę,	798	ę,	Q.	QX QX	ę,	QN	N O	12	SOIL	08/30/93
PIMWED LABDUP	ę.	QN Qu	812	Q.	ę,	ę,	QN Q	QN QN	6X	12	SOIL	08/30/93
PIMW9A	Ç.	ğ	ě	CN CN	QN Q	C.	QN	ě	QN Qu	1-3	SOIL	08/29/93
PLMW9AA	7	10	4	12	QN	80	BMDL	14	c o	2	WATER	08/29/93
PIMWSAW	QN Q	m	BMDL	₽ Q	14	9	ND CM	Q.	Q.	9	WATER	08/28/93
P1PZ3	ę,	Ę¥	ě	Q.	Q.	Q.N	ZN CN	QN	Q.	3	WATER	08/24/93
P1SB4B	ę,	ě	ĕ	QN Qu	QN	Q.	ξ.	N O	CM	2-4	SOIL	08/25/93
PITWISA	Q.	ξ.	ě	ę,	Q.	QN QN	QN	QN	Ę.	5-7	SOIL	09/12/93
PITWISAW	7	ě	Q	н	Č.	BMDL	ND CM	4	CN CN	6	WATER	09/12/93
SIMMIIA FIELDDUP.	ğ	ē	ę	Q.	ę,	ę.	Q.	ÇN CN	Ð	я	SOIL	08/31/93
SIMWIIA LAB DUP	QN QN	B	166	ę	Q.	SZ CZ	Q.	QN	E G	Э	SOIL	08/31/93
SIMWIIAA	£	ě	ę.	ę,	Ð	S	ě	Q _N	Ę.	ю	WATER	08/31/93
PZMW6A	QN CN	ğ	Q.	Q.	Q.	£	ě	Q	QN QN	0-2	SOIL	16/93
P2MW6AA	QN QN	£	QN QN	æ	QN QN	Ę.	Q	C _N	Q	80	WATER	08/24/93
P2MW6BB	QN	QN QN	QN QN	NO ON	QN	ĕ	QN QN	Ç.	ě	9	WATER	66/60/60
P2MW6C	Q	ξ.	Q.	QN Q	CN	QN QN	Q.	Ę	Đ.	14-16	SOIL	08/16/93
P2MW6C	Q	₽ Q	Č.	Ħ	Ę	QN CN	QN QN	Q.	ğ	14-16	SOIL	08/11/93
P2MW6D	Q.	GZ.	QN QN	Q.	QN	QN.	Ę,	QN CN	NO ON	18	SOIL	08/11/93
Р2ММ6Н1	ě	Q.	н	BMDL	BMDL	QN QN	QN QN	ę,	QN QN	12	WATER	08/16/93
P2MW6H2	ВМ	ю	BMDL	Q	QN QN	QX	G.	ND QN	G.	27	WATER	08/16/93
Р2М И	Q.	QN QN	QN Q	Q.	Ω.	QN QN	QN QN	QN QN	ğ	42	WATER	08/16/93
P2MW7A	ğ	Q.	ð	ğ	S	BMDL	Q.	CN CN	Ę.	0-2	SOIL	08/18/93

SAMPLE ID	t-1,2-DCE	t-1,2-DCE c-1,2-DCE Benzene	Benzene	TCE	Toluene	PCE	EB	m/p-Xylene o-Xylene Depth	o-Xylen	e Depth	Matrix	Date
P2MW7A LAB DUP	ě	ě	ě	ę,	QN	BMDL	CN CN	ğ	Q.	0-2	SOIL	08/18/93
P2MW7 AA	Q.	Ç.	н	Q	QN	6	Q.	₽ Q	ğ	7	WATER	08/24/93
P2MW7B	QN QN	C _N	Ð	Ð	QN	BMDL	Q.	₽ Q	Ø	4-6	SOIL	08/18/93
P2SB2A	Q.	Č.	Q.	ę	QN	Č.	Q.	QN	S	0-2	SOIL	08/14/93
P2SB2B	₽.	ď	QN QN	QN Q	CIN	Ç <u>N</u>	Q	ę,	ğ	2-4	SOIL	08/14/93
P2SB2C	CZ.	GN CN	QN QN	Q	QN QN	QN	ğ	Q	ğ	4-6	SOIL	08/14/93
P2SB2D	Q.	CN	QN	Ð	QN QN	QN QN	Q.	ē.	ě	8-9	SOIL	08/14/93
P2SB3A	₽ Q	QN QN	QN QN	Ð	ξ.	Ę	Q.	Q.	<u>R</u>	0-2	SOIL	08/14/93
P2SB3B	QN QN	ę,	QN	Ð	QX QX	Ę.	Q.	Q.	Q.	2-4	SOIL	08/14/93
P2SB3C	CN	ĕ	Q	Q	MD	Q.	QN	ě	ğ	4-6	SOIL	08/14/93
P28B3D	QN QN	Q.	QN.	8	QN	ę,	Q.	QN	Š	6-8	SOIL	08/14/93
T P2SB4A	Q _N	ВМ	Q	Q	ND	4	Q.	Q.	S S	0-2	SOIL	08/14/93
on PISB4A LABDUP.	QN	BM	QN CD	Q.	ND	е	Q.	Q.	QN.	0-2	SOIL	08/14/93
P2SB4B	Ęź	CZ.	QN	Q.	QN	Ę.	Q.	QN QN	S S	2-4	SOIL	08/14/93
P2SB4C	QN	ğ	QN	Q	QN	BMDL	QN	QN QN	QN	4-6	SOIL	08/14/93
P2SB4D	QN QN	ВМ	Q.	Q	NO ON	н	ğ	QN	CK.	8-9	SOIL	08/14/93
P2SB5A	CN	ВМ	QN	Q.	QN	13	Q	QN QN	₽ Q	0-2	SOIL	08/14/93
P2SB5B	QN	QN QN	QN.	Ð	ON	7	Q.	QN QN	Q.	2-4	SOIL	08/14/93
P2SB5C	Q.	CN CN	Q.	Q.	QN	BMDL	Q.	QN	Q.	4-6	SOIL	08/14/93
P2SB5D	QN QN	Q.	Q.	Q	QN	7	Ę,	QN QN	CK.	8-9	SOIL	08/14/93
PZSB6A	CN CN	Č.	Q.	NO	QN	BMDL	ē.	Q.	Ð	2-4	SOIL	08/15/93
P2SB6B	Q.	ğ	Q	ě	ON	Č.	ę,	GN CN	Q.	4-6	SOIL	08/15/93
P2SB7A	Ę	QN QN	Q	QN QN	QN	Ę	Q.	QN QN	Q	2-4	SOIL	08/15/93
P2SB7B	Q.	ę,	Q	Q.	QN	CN CN	QX	QN QN	ğ	4-6	SOIL	08/15/93
P2SB7B LABDUP.	C C	Ę	QN	QN QN	QN O	GN CN	Ę	QN QN	QN Qu	4-6	SOIL	08/15/93
PZSB8A	G Z	Ç.	Q	QN	QN	QN	Ç,	Q	QN	2-4	SOIL	08/15/93
P2SB8B	Q.	Ç.	QN QN	QN	QN QN	QN Qu	ğ	QN	QN	4-6	SOIL	08/15/93
P2SB8C	CZ.	ę,	Q.	QN	QN	QN	S.	QN	QX	54-56	SOIL	08/16/93
P2SB9A	Ę.	QN QN	QN QN	QX	QN CN	т	QN Qu	ę,	Q	0-2	SOIL	08/11/93
P2SB9A	Ę	QN QN	ND CN	8	ND CN	н	ğ	QN	ğ	0-2	SOIL	08/11/93
P2SB9B	G.	S S	Č.	QN QN	QN QN	CN CN	Č.	Q.	Q	2-4	SOIL	08/17/93
4 9 9 ME G	£	£	Ę	Q	Q	£	ğ	M	Ę	74	WATED	08/30/93
C Least Canes)	1	<u>!</u>	<u>}</u>	ì	l i	l i	1	}	į	477	1 100

Analytical Results from On-Site Field GC Alpena CRTC, Alpena MI UNITS ppb

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SAMPLE ID	t-1,2-DCE	t-1,2-DCE c-1,2-DCE Benzene	Benzene	TCE	Toluene P	PCE	E E	m/p-Xylene o-Xylene Depth	o-Xylene	Depth	Matrix	Date
PJMWGAW	CN.	ğ	BMDL	Q	ğ	ě	ě	QN QN	ę,	17	WATER	08/25/93
РЭМИБВИ	7	16	7	E	BMDL	Đ.	QN QN	QN QN	ğ	27	WATER	08/26/93
Pammec	ę,	ON	g	QN CN	ND CM	QN QN	QN QN	Ę.	6 E	13-15	SOIL	08/25/93
P3MW6C LABDUP.	ę,	QN QN	ę.	QN	QN QN	S.	Q.	QN Qu	G.	13-15	SOIL	08/25/93
P3MW7A	Č.	QN	ē	QN	QN Qu	QN QN	Q.	QN QN	Ę.	3-5	SOIL	08/31/93
P3MW7AW	Q.	6 E	BMDL	ę,	ND CM	QN Qu	ð	QX QX	ě	19	WATER	08/30/93
P3MW7B	ę,	Q.	QN	QN	CN	QN QN	QN QN	ě	QX	8-10	SOIL	08/31/93
P3MW7BW	Ę	QN QN	<u>Q</u>	QN QN	QN.	Q.	₽ Q	QX	Ę.	29	WATER	08/30/93
P3MW7C	Č.	QN	Q.	QN	QN	QN QN	QN	QN	Q.	13-15	SOIL	08/31/93
P3MW7CW	Ę	QN QN	BMDL	ON	Q.	Q	Q.	M	Q.	39	WATER	08/30/83
P3PZ1A	ě	QN Qu	Q.	QN	QN QN	g	S S	ě	Ę,	E	SOIL	08/25/93
P3PZ1AA	QN QN	Q.	BMDL	QN Q	QN.	QN QN	Q.	Q	QN Qu	3	WATER	08/30/93
P3PZ1B	Q.	Ç.	Q	QN	QN	QN QN	Q.	QN Qu	Q.	9-11	SOIL	08/25/93
P3PZ1B LAB DUP	ě	QN	QN Qu	ΩN	QN QN	QN Qu	QN Qu	₽ Q	ğ	10	SOIL	08/25/93
P3PZ1C	Q.	ę,	Q	QN Qu	QN	QN	Q.	34	116	18	SOIL	08/25/93
P3PZ2AA	ě	QN QN	ę,	QN Qu	Ç.	CN CN	ğ	CN	N ON	e	WATER	08/29/93
P3PZ6A	ě	Q.	Q.	NO CM	Ę¥.	CN	₽ Q	QN	ND CM	e	SOIL	08/25/93
P3SB11A	ě	Č.	Q	Q.	QN CN	QN QN	Q.	QN	Q.	4-6	SOIL	08/26/93
P3SB11A LABDUP.	QN QN	Q.	B	QN Qu	Q.	ě	Ç.	CN	Đ.	4-6	SOIL	08/26/93
P3SB11B	ě	ě	QN	Q.	Q.	QN QN	Q.	CN	Đ.	8-10	SOIL	08/26/93
P3SB11C	ě	Q.	Ę	Q.	Q.	ę,	QN QN	QN	Q.	10-12	SOIL	08/26/93
P3SB12A	ě.	Q	Ę.	Q.	QN QN	NO CN	QN Qu	QN.	QN QN	0-2	SOIL	08/26/93
P3SB12B	ě	QN	Ę	Q.	Q	QN Qu	CN CN	QN QN	Đ.	4-6	SOIL	08/26/93
P3SB12C	Q.	Đ.	QN QN	QN QN	QN QN	QN	QN	QN	Ę.	8-10	SOIL	08/26/93
P3SB12D	Q	Q.	Q.	ND CM	QN	SZ	QN Qu	EN CEN	QX	10-12	SOIL	08/26/93
P3SB12D LABDUP.	ě	QN QN	Ę	Q.	QN QN	EN CH	Q.	CN CN	QN QN	10-12	SOIL	08/26/93
P3SB13A	Q.	Q.	QN Qu	Q.N	MD	QN.	Q.	Q.	Q.	0-2	SOIL	08/26/93
P3SB13B	Q.	Č.	ę	Ę.	QN QN	Š	QN QN	QN CN	Q.	4-6	SOIL	08/26/93
P3SB13C	Q.	Ą	NO CM	QN QN	Q.	ę,	ę,	Ę¥	Đ.	8-10	SOIL	08/26/93
P3SB13D	Ę,	Q.	CN CN	CN CN	QN	MD	QQ	Ę¥	£	10-12	SOIL	08/26/93
рззвізнрі	Q.	ę.	BMDL	QN QN	QN	CN CN	QN QN	ě	Q.	17	WATER	08/26/93
P4B15A	ě	Đ.	BMDL	BMDL	ę,	BMDL	QN	Q.	ğ	0-2	SOIL	08/11/93

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SAMPLE ID	t-1,2-DCE	t-1,2-DCE c-1,2-DCE Benzene	Benzene	TCE	Toluene	PCE	EB	m/p-Xylene o-Xylene Depth	a o-Xylen	e Depth	Matrix	Date
P4B15B	QN	Ę.	BMDL	6	QN QN	Q	Q.	CN CN	Q	4-6	SOIL	08/11/93
P4B15C	Q.X	QN QN	BMDL	QN QN	ę,	QN	QN QN	Q.	Q.	9-11	SOIL	08/11/93
P4B15D	Ę¥.	QN	BWDL	QN QN	QN	Ð	Ð	Q.	Q.	14-16	SOIL	08/11/93
P4B15E	CN CN	ğ	BMDL	Q.	QN QN	Q	Q.	QN QN	æ	19-21	SOIL	08/11/93
P4B15E DUP.	ě	Ę	BMDL	ę,	Đ.	Q	Ð	Q	Q.	19-21	SOIL	08/11/83
	į	į	į	į	į	į	į	!	į	,		
POSMWSAA	QN	QN	Q	Q	Q.	O.N.	Q	Q	Q	٥	WATER	08/24/93
POSMWGAA	Q.	g	Q.	QN QN	Ę	ğ	Ę	QN QN	Q.	9	WATER	08/24/93
POSMW7AA	CN	Q.	CN CN	Q.	QN QN	ğ	Q.	QN	Ş	7	WATER	08/24/93
PSMWSA	GN	Q.	BMDL	QN	QN	Q.	Q.	QN	S	0-2	SOIL	08/12/93
PSMWSB	Q.	Ę.	BMDL	QN	QN	ē	Q.	QN QN	QN Qu	4-6	SOIL	08/12/93
PSMWSC	Q.	Ð	BWDL	QN	ę,	Q.	Q.	QN CN	QN.	8-10	SOIL	08/12/93
PSMW6A	Q _N	Q _N	BMDL	QN QN	N O N	QN	QN QN	QN QN	Q.	0-2	SOIL	08/12/93
PSMW6B	QN Q	QN QN	BMDL	NO CN	ě	QN Q	Q.	Q.	Q.	4-6	SOIL	08/12/93
PSMW6B LAB DUP	Q	Ą	Q.	Q.	QN QN	Q.	QN	QN	Q.	9-6	SOIL	08/12/93
PSMW6D	Q ₂	QN	BMDL	QN QN	Q.	Q	Q.	QN QN	Ð	19.5	SOIL	08/12/93
PSMW6E	6	24	12	2	19	9	12	12	12	21	SOIL	08/12/93
P5MW7A	QN	Q.	QN	Ę.	QN Q	QN	ę,	Q.	g	0-2	SOIL	08/12/93
PSMW7A LAB DUP	Ę,	Ę	BMDL	CN	ě	æ	Q.	QN	ę.	0-2	SOIL	08/12/93
P5MW7B	Ę,	G _X	BMDL	QN QN	QN QN	Q	Q.	QN	ğ	4-6	SOIL	08/12/93
P5MW7C	QN QN	Q	BMDL	G.	QN QN	g	Ç.	Q.	Ð	6	SOIL	08/12/93
PSMW7D	Ą	Q _N	4	QN CN	QN Q	Q	Q.	Q.	æ	20	SOIL	08/12/93
PSMW7D DUP	Q.	Q.	м	QN	QN	Q.	Q	Q _N	Q	20	SOIL	08/12/93
PSTW10AW	QX	QX QX	BMDL	QN CN	QN	Ð	Š	QN QN	QN.	20	WATER	09/10/93
PSTWBAA	Ę¥.	Ç.	Q.	QN CN	QN QN	Ð	GN CN	QN QN	œ.	7	WATER	09/08/93
PSTWBAW	Q	co	30	BMDL	QN QN	QN QN	6 E	Q.	R	19	WATER	08/31/93
PSTW8AW FIELDDUP.	S S	∞	34	QN CN	CIN	Ð	Ç.	QN QN	Q	19	WATER	08/31/93
PSTW8AW LABDUP.	Q.	60	30	7	QN CN	<u>R</u>	6 G	6X	S.	19	WATER	08/31/93
PSTW9AW	Q.	QN CN	ě	ę,	QN QN	8	CN CN	QN	R	6	SOIL	69/60/60
PSTW9BW	ē.	Q.	QN QN	CN	QN	ě	QN	QN	Q.	14	WATER	09/09/93
PSTW9CW	QN QN	QN.	QN	QN CN	QN QN	8	ę,	QN	QN Q	18	WATER	09/09/93
PSIW9CW	Đ.	Q.	QN QN	Ę.	ę,	Q.	Ę	Ð	ē.	18	WATER	66/60/60

Analytical Results from On-Site Field GC Alpena CRIC, Alpena MI UNITS ppb

SAMPLE ID	t-1,2-DCE	t-1,2-DCE c-1,2-DCE Benzene	Benzene	TCE	Toluene	PCE	EB	m/p-Xylene o-Xylene Depth	• o-Xylen	e Depth	Matrix	Date
LFGAHA	CK CK	ě	BMDL	GN CN	BMDL	QN QN	ð	Ć,	Q.	Ħ	SOIL	09/11/93
LFGAHB	6X	QN	BMDL	Q.	BMDL	Q.	S S	CN CN	ě	н	SOIL	09/11/93
LF6AHC	G.	Q.	Q.	4	Ð	Q.	14	QN QN	Ð	н	SOIL	09/11/93
LF6AHC LABDUP.	Q.	QN QN	BMDL	4	ę,	7	12	QN CN	G.	+	SOIL	09/11/93
LFGER	CN CN	QN CN	Q.	Ę	QN QN	Q.	Ω _N	Ę.	S.	QA	WATER	09/11/93
PO6MW4AA	Č.	QN	ě	QN QN	ě	QN Qu	QN.	Q.	Q.	12	WATER	08/24/93
POGMWSAA	CN CN	Q.	Q.	CZ.	QN Q	Ω.	Q.	Ę	Ð	10	WATER	08/24/93
P6MW4A	ÇN Q	Q.	BWDL	Ę	QN	QN Qu	Ę,	Q.	Ð	0-2	SOIL	08/11/93
P6MW4B	Q.	Q.	BMDL	Q.	QN QN	Ð	G.	QX	Ð	4-6	SOIL	08/11/93
P6MW4B SPIKE	67	82	91	100	166	112	160	159	143	QA	SOIL	08/11/93
P6MW4C	Đ	Č.	BMDL	Ę.	QN QN	QN Q	G.	Q	Ð	8-10	SOIL	08/11/93
P6MW4C SPIKE	59	7.7	7.8	87	146	96	140	140	124	QA	SOIL	08/11/93
Pemysa	Q.	ę,	BMDI	Q.	QN	ě	Ęź.	QN QN	ě	н	SOIL	08/11/93
PEMWSC	ぜ	18	QN	18	38	64	82	44	34	10	SOIL	08/11/93
PEMWSC LAB DUP	S.	21	g	20	44	72	87	41	38	10	SOIL	08/11/93
PEMWSD	9	16	Ą	22	40	49	86	44	51	10	SOIL	08/11/93
P6MW5E	ě	43	ę,	64	78	122	478	160	875	80	SOIL	08/11/93
PEMWEA	QX QX	ĕ	QN QN	QN QN	ě	Q.	QN QN	QN Q	Q	9-4	SOIL	08/14/93
PEMWEAA	Q.	ę.	C.	g	ę,	ě	Q.	CM	Q	16	WATER	08/11/93
PEMWEB	Q	Q.	ę,	Q.	Q.	QN Q	Ę,	ξ.	6	9-11	SOIL	08/14/93
PEMWEC	Q	QN QN	ę,	Q.	QN QN	ğ	QN QN	ę,	Q.	14-16	SOIL	08/14/93
PEMWED	Q.	QN QN	Ę.	g	QN CN	ND CM	QN QN	QN QN	QN	38-40	SOIL	08/14/93
P 6MW7A	Q.	QN QN	ę.	g	QN	ğ	ę	Q.	ğ	0-2	SOIL	08/16/93
P 6 MW7 AA	Q	Đ.	Q¥	Q.	QN QN	ğ	CN CN	ě	ğ	10	WATER	08/24/93
P6MW7B	Q	QN QN	Q.	QN Q	CN	Ç.	CN CN	Q.	Q.	7-9	SOIL	08/16/93
P6MW7C	ВЖ	Q.	S	BMDL	BMDL	ę,	QN QN	Q.	Q	14	SOIL	08/16/93
P 6 MW7 D	Q	QN QN	CN CN	Ð	Q.	CN CN	£	QN CN	ę,	13-15	SOIL	08/16/93
PEMWSA	ě	QN	Q.	Q.	CN CN	£	Q¥	QN Q	QN Qu	н	SOIL	08/27/93
PEMWBAA	ВМ	9	24	σ	Č.	4	23	22	Đ.	12	WATER	08/29/93
PEMWBAA LABDUP	т	7	24	0	QN	4	20	17	Q.	12	WATER	08/29/93
PEMWBAW	Q	£	Q.	QN QN	QN QN	ě	QN Q	QN	£	12	WATER	08/27/93
P6MW8AW FIELD DUP	Q	ě	e Q	QX	QN QN	£	QN	QN QN	QN QN	12	WATER	08/27/93
P 6 MW8 B	ğ	ě	CN CN	Q	Q	CN CN	<u>Q</u>	QN Qu	6 G	7-9	SOIL	08/27/93

V)	SAMPLE ID	t-1,2-DCE	c-1,2-DC	t-1,2-DCE c-1,2-DCE Benzene	ICE	Toluene	PCE	EB	m/p-Xylene o-Xylene Depth	o-Xylene	Depth	Matrix	Date
P4	PEMWRC	09	82	*QN	5724	408	3752	0163	0000		,		
Ь	P6MW8D	Ć.	QN QN	ě	QX	Ę	, <u>, , , , , , , , , , , , , , , , , , </u>	0750	3028	6958	9-11	SOIL	08/27/93
Д	PÉMWBE	71	12	α	12		Q (QN ,	Q	Q.	11-13	SOIL	08/27/93
Д	PEMWEE LABDUP	- 71	1 4) cc	7 .	g j	70	16	ě	£	13-15	SOIL	08/27/93
Д	PEMM9AA	2	; <u> </u>	, §	T (Q I	1.0	10	Q.	Q.	13-15	SOIL	08/27/93
Δ	ремизам	<u> </u>	9	2 !	Q !	QN	Ę	Q.	Q	Q.	11	WATER	08/29/93
μ	DEMMONAL DEPUTE	2 9	g !	QN I	£	Q.	QN QN	CZ.	CN CN	æ	16	WATER	08/28/93
	Demis on	<u>S</u> !	QN !	£	Q.	Q.	CN CN	QN	QN	CN CN	16	WATER	08/28/93
4 6	WOTHER	Q	Q.	Q.	S G	QN Q	QN QN	C _N	QN	ę,	5-7	SOTT	00/10/00
Du É	P6TW10AW	Q	Q	CN CN	£	<u>R</u>	CN CN	Q.	g	Ę	13	WATER	09/12/93
у,	FOINTOR	Q	8	CK CK	ę.	Q	4	QN.	Č.	Q.	7-9	SOIL	09/12/93
	PBMW5A	QN QN	CN.	Q.	Q	Ę	Ę	Ę	į	!	,		
-9	P8SB2A	QX	QN CN	BMDT	Ę	9		Q !	QN	£	13-15	SOIL	09/12/93
	P8SB2B	Ę	2	BMDT	£	g g	Q I	2	QN QN	ğ	1-3	SOIL	08/13/93
P	P8SB2C	Q.	<u> </u>	BMDT		S i	Q !	Q.	<u> </u>	Ð	5-7	SOIL	08/13/93
ď	PRSB2D	9	9 9	TOWN TOWN	QV !	Q	Ę	ğ	Q.	Ę,	9-11	SOIL	08/13/93
Ã	and and and and and and and and and and	2 9	2 !	HADL	£	QN Qu	QN Q	C.	NO CN	ě	11-13	SOIL	08/13/93
Ä	PRSB3	2 g	2 F	BMDL	e i	QN Q	Ę.	Q.	ę,	æ	56-58	SOIL	08/13/93
Ä	2000 ac ac ac ac ac ac ac ac ac ac ac ac ac	2 9	2 1	BMDL	£	Q	ē	QN Q	ě	ð	1-3	SOIL	08/13/93
ā	DESER	2 9	2 9	BMDL	Q !	Q	Q.	Č.	Ę.	QN Qu	5-7	SOIL	08/13/93
A	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	2 9	2 2	HMDL	Q	Č.	Ę	QN QN	Ę	S S	9-11	SOIL	08/13/93
. 0	D85B4B	2 1	E I	Q	Q.	Q.	Q.	Q	QN Qu	S.	0-2	SOIL	08/13/93
4 0	78884C	₹ £	2 9	8 !	<u>8</u> !	B	S S	S.	Q _N	Q.	4-6	SOIL	08/13/93
60 A	P8SB4D	2 2	£ £	TUNG	9 9	e i	8 1	Q.	QN QN	Q.	8-10	SOIL	08/13/93
94	PBSB5C	Ę	}	TONG	e i	Q !	Q	Q	Q.	Q.	0-2	SOIL	08/13/93
98	Pasaga	Ę	9 9	Dental A	Ž į	2 !	£	ğ	Ω Ω	Q.	9-11	SOIL	08/13/93
98	PRSB6C	£	9 6	2 9	3 i	Q !	£	CN CN	ğ	Ð	4-6	SOIL	08/15/93
Ω	Pasaen	9		2 1	Q !	ON.	£	Q.	CN	NO CM	8-10	SOIL	08/15/93
, a	0.000			מא ו	QN	ę	Q.	Q.	QN Q	NO ON	12-14	SOIL	08/15/93
	270000	ą į	E S	Q.	ē	Q.	Q.	N Q	GN CN	Q.	4-6	SOIL	08/15/93
4 6	Dog Stranger	Q I	Q !	Q	ę	PA PA	Q	CN	QX QX	ě	8-10	SOIL	08/15/93
4 6			Q	Ę	Ę	Q.	Q.	Q.	ND CN	ę,	12-14	SOIL	08/15/93
, b	FOSBOA TAB DITA	Q !	£ !	£	Ð	CN CN	ě	ě	Q.	G.	1-3	SOIL	08/11/93
4	ADD GWT GOGS	Q	Q.	2							5-7	SOIL	08/17/93

Analytical Results from On-Site Field GC Alpena CRIC, Alpena MI UNITS ppb

SAMPLE ID	t-1,2-DCE	t-1,2-DCE c-1,2-DCE Benzene	Benzene	TCE	Toluene	PCE	EB	m/p-Xylene o-Xylene Depth	o-Xylene	Depth	Matrix	Date
	2	ę,	Q	ě	QN CN	B	CN CN	Q.	ě	9-11	SOIL	08/11/93
P8SB8D	QN	CN	6	₽ Q	E.	CN CN	Q.	CN.	ě	13-15	SOIL	08/11/93
	í	į	É	Ş	Ę	v	Ę	Ę	2	20	WATER	09/12/93
PUMMABB	2 5	9 5	9 9	2	£	£	£	QN QN	ę	21	WATER	09/12/93
DOWNER	2	2	Ę	Ę,	£	Ę	ě	Q.	Ę.	3-5	SOIL	08/31/93
E SWM64	Q	ĆŽ	Š	QN	QN QN	ğ	QX	ě	Ð	8-10	SOIL	08/31/93
POWMEC	2	Ð	Đ.	Q.	QN	4	QN.	ę,	QN Qu	13-15	SOIL	08/31/93
P9SB13A	Q.	QN QN	Q.	ğ	QN	6	Q.	Q	Q.	4-6	SOIL	08/29/93
P95B13B	QN	Š.	£	ğ	ON	Q	QN QN	Ę	Q.	14-16	SOIL	08/29/93
P9SB13C	ē.	ě	ě	QN.	QN	Q.	Q	Q.	ğ	56-58	SOIL	08/29/93
P9TW7AW	Đ.	101	119	22	95	24	Ð	1068	881	21	WATER	09/10/93
P9TW7BW	4	16	7	7	BMDL	н	QN QN	19	11	31	WATER	09/10/93
P9TW7BW LABDUP.	4	18	71	7	BMDL	1	Q.	18	10	31	WATER	09/10/93
P9TW8AW	٣	QN QN	4	Q.	BMDL	ğ	QN QN	QN QN	Q _N	6	WATER	09/12/93
P9TW8AW LABDUP.	QN.	QN QN	74	ğ	BMDL	Q.	ę.	Q.	Q.	б	WATER	09/12/93
RISMWGAA	Q	206	281	536	3770	298	Ę.	10920	6910	19	WATER	08/31/93
DECONH20	ě	Q.	BMDL	QN QN	Q.	Q.	Q.	æ	B	0	SOIL	08/11/93
PBG1A	ě.	QN QN	BMDL	BMDL	QN CN	Q.	Q.	Q.	ě	0-2	SOIL	08/10/93
PBG1B	QN.	6 E	BMDL	BMDL	QN QN	Q.	Q.	QN	MD	2-4	SOIL	08/10/93
PBG1C	Q.	QN QN	BMDL	BMDL	QN	Œ.	Q	QN QN	Q.	4-6	SOIL	08/10/93
PBG1D	ě	6X	BMDL	BMDL	Q.	Æ	ğ	QN QN	S.	8-10	SOIL	08/10/93
PBG2A	QX	QN QN	ğ	ę,	Q.	BMDL	ğ	QN	Q.	0-2	SOIL	08/12/93
PBG2B	QX	GN CN	S S	Q.	QN	CN.	QN	QN QN	Ð	2-4	SOIL	08/15/93
PERA	ě	QN QN	BMDL	QN QN	QN Q	ę,	Q.	QN	Q.	OA	WATER	08/11/93
PERAA	Š	6X	ğ	QN CN	Q.	QN	Ð	Q	Q	OA	WATER	08/29/93
PERAB	ē.	Q.	QN.	Q.	Q _N	ğ	ğ	QN QN	QQ.	δĀ	WATER	08/29/93
PERAC	QN QN	Q _N	ğ	Q.	QN QN	Q.	QN	QN QN	£	o _A	WATER	08/30/93
PERAD	QN QN	C _X	8	QN QN	QN CD	QN QN	g	Q	g	o.	WATER	08/31/93
PERB	QN	QN QN	<u>R</u>	ę.	QX	æ	QN Q	QN	Ð	O.A.	WATER	08/16/93
PERB	QN	QN QN	BMDL	QN Q	Q.	ě	Q.	QN QN	ę,	ΝÖ	WATER	08/16/93
PERBB	Q	ę,	6X	QN CN	Q	CN CN	Q.	Ð	ğ	4 0	WATER	09/10/93

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PAGE

Appendix F: Surface Water and Sediment Sampling Forms

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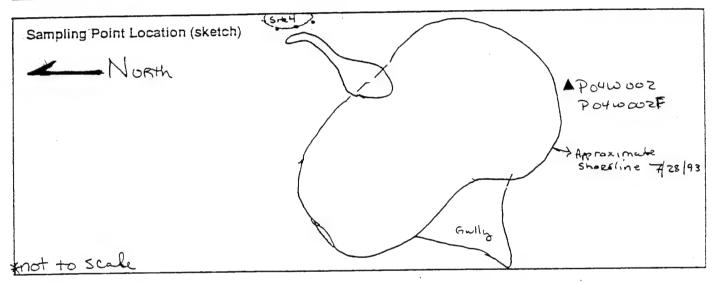
Sampling Point Location (sketch)	(5-44)	
North		
`		
		Approximate Shockline 7/28/93
	Gully	100001 BOYWOOLE
enot to scale)
mot to scarc		

Water Parameters			
Before Sampling: After Sampling:	 EC 298 Man	Temperature <u>CO.Z.F</u>	

Analytical Parameter	Sampling V	If Fiel Filtered		Volume Required	Sample Bottle I.D.s
Vocs	Surface		HCL ,4°C	4x40mL glass	
Svocs	surface		, 4°C	2x 1 Liter glass	
TPH	Sueface		HCL 4°C	1 x 1 Lites class	Potwool
PPmetals	Sueface		11402 40E	1x luter plastic	100 W 001
PP metals	Surface	/	HN03,4°C	1 × Liter plustic	POLWOOLF
			-		
					1



Project Name Alpena CRTC, MIANG Location Sinkhole, Southwest of Site 4 Site 4 - Surface dealnage - Recorded By PH Lay Checked By	Project Number 931800-12 Sample Number P040000 7 (F) Duplicate Number Date Date
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Water Parameters				
Before Sampling:		EC	Temperature	4 —
After Sampling:	pH 7.44	EC 273 us/ca	Temperature <u>Q</u>	

Analytical Parameter	Sampling √ If Depth Filte	Field Preservation ered Method	Volume Required	Sample Bottle I.D.s
Vocs	Surface	HCL, 4°C	4 x 40mL glass	70400002
Svocs	Surface	1, 4°C	2x 1 Liter glass	P040002
TPH	Sueface	HCL , 4°C	1 x 1 Liter class	P040002
ppmetals	Surface	thros 406	1x lutee plastic	
PP metals	Surface	V HUO3,4°C	1 x Liter plastic	P04W002
		-		
				1

Location Sucher Sandades, 5 to part of Suchol	Project Number 931800-12 Sample Number P04w003(F) Duplicate Number Date 7/28/93 Date
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	(5+44)	▲ POH W 00 3 F
Sampling Point Location (sketch)		PO4WOO3F
North		
		Approximate Shorkline 7/28/93
	Gu	ally \
anot to scale		V

Water Parameters	
Before Sampling: After Sampling:	

Analytical Parameter	Sampling √ If Depth Fill	Field tered	Preservation Method	Volume Required	Sample Bottle I.D.s
10cs	Surface		HCL , 4°C	4x40mL glas	
Svocs	Sur-face		, 4°C		8 Poywoo3
TPH	Sueface		HCi ,4°c	1 x 1 Liter de	55 PHW003
pmetals	Surface		114203 4° €	1x lutee plass	11 POYWOUS
Prnetals	Surface	/	HN03,4°C	1 x liter plast	16 PD4W003F
			-		



Sampling Point Location (sketch)	Siet	
North		
	Approximate Shorkline 7/28	
	Shorkline 7/28	93
	Gully	
*not to Scale	Poywoot Pay would	

Water Parameters			
Before Sampling: After Sampling:	_ EC <u>303mskn</u>	Temperature 62.6°	

Analytical Parameter	Sampling √1 Depth Fi	lf Field iltered		Volume Required	Sample Bottle I.D.s
Vocs	Surface		HCL , 4°C	4x40mL glass	PHWOOH
Svocs	Surface		, 4°C	2x 1 Liter glass	POHW004
TPH	Sueface		HCL , 4°C	1 x 11 ster dess	Polloon
PPmetals	Surface		1600 4° 6	1x llater plastic	P04W004
PP metals	Surface		HN03,4°C	1 x Litea plustic	POYWOOLF

Project Name Alpena CRTC, MIANG Location <u>Sukhole</u> , Southwest of Site 4 Site 4 - Surface drainage Recorded By Ph Lay Checked By	Project Number 931800-12 Sample Number Poquoos (F) Duplicate Number Date 7/30/93 Date

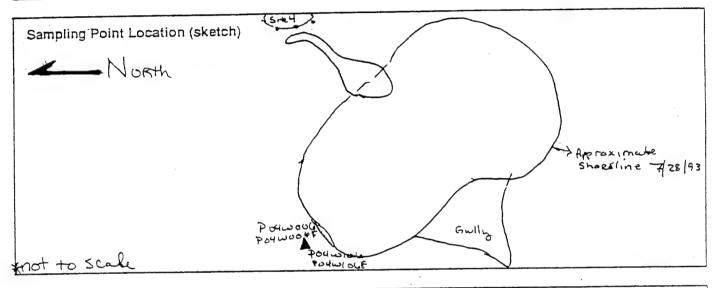
Sampling Point Location (sketch)	(5)-24
North	
·	A so cox me te
	Shorkline 7/28/93
	Gully
enot to scale	Palmonz barmonze

Water Parameters	
Before Sampling: pH 8.05	EC 291 ms/om Temperature 58°F

surface				
		HCL , 4°C	4x40mL glass	
surface		, 4°c	2x 1 Liter glass	984W005
		HCL , 4°C	1x 1 Lites class	POLMOOS
		11402 406	1x llatee plastic	1596mbed
	/	HN02 ,4°C	1 x liter plustic	P04 W005F
-	Sueface Sueface Sueface Sueface	Sueface Surface	Sueface HCL, 4°C Sueface HWaz 4°C	Surface HCL, 4°C 1x 11, ter plass Surface H203, 4°C 1x 11, ter plassic



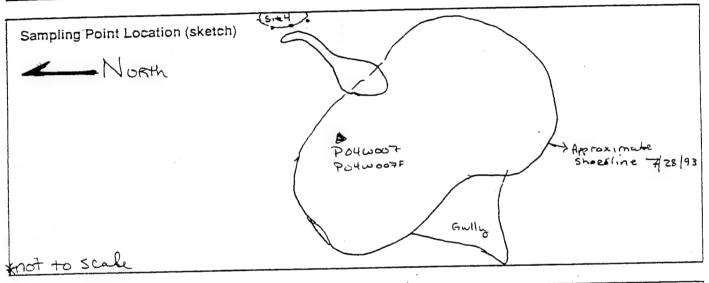
Location <u>Sinkhole</u> Southwest of Site 4 Site 4 - Surface deninge Recorded By PH Lay	Project Number 931800-12 Sample Number Po4wook(F) Duplicate Number Po4w10k(F) Date 7/30/53 Date
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Water Parameters				•
Before Sampling: After Sampling:	pH 7.87	EC_406us/an	Temperature_	

Analytical Parameter	Sampling √If Depth Filt	Field Preservation ered Method	Volume Required	Sample Bottle I.D.s
Vocs	Surface	HCL , 4°C	4x40mL glass	P64 WOOL
SVOCS	surface	, 4°c	2x 1 Liter glass	porwool
TPH	Sueface	HCL , 4°C	1 x 1 Liter class	7840004
ppmetals	Surface	11400 40E	1x litee plastic	704w006
PP metals	Surface	V HNO2, 4°C	1 x Liter plastic	804 WOULF
VOCS	surface	HCL 740e	11 x 40 mc glass	PALMIOA
SVOCS	surface	400	2 × 1 Liter glass	Po4W106
TPA	surface	HCL: 40E	1 XI Liter glass	Do4 w104
Prmetals	Surface	14NO2 ,40C	111. ter plastic	Poullole
Prmitals	Supface "	1 HNO2, 4°C	1 x Liter plastic	

Project Name Alpena CRTC, MIANG Location Sinkhole, Southwest of Site 4 Site 4 - Surface deninage Recorded By PH Lay	Project Number 931800-12 Sample Number Po4woo7 (f) Duplicate Number Date
Checked By	Date



Water Parameters	
Before Sampling:	70 4 00
After Sampling:	pH 7.33 EC 33Ce Ms/cm Temperature TD. TF

Analytical Parameter	Sampling √1 Depth Fi	lf Field iltered	Preservation Method	Volume Required	Sample Bottle I.D.s
Joes	surface		HCL , 4°C	4x40mL alass	764W007
Svocs	Sur-face		, 4°c	2x 1 Liter glass	P04w007
TPH	Sueface		HCL 4°C	1 x 1 Liter class	P04W007
PP metals	Sueface		11400 40E	1x lutee plastic	P04W007
PP metals	Surface	1	HNO, ,4°C	1 x Liter plastic	P04W007F
11 1101213	- Jones Jaco		3		

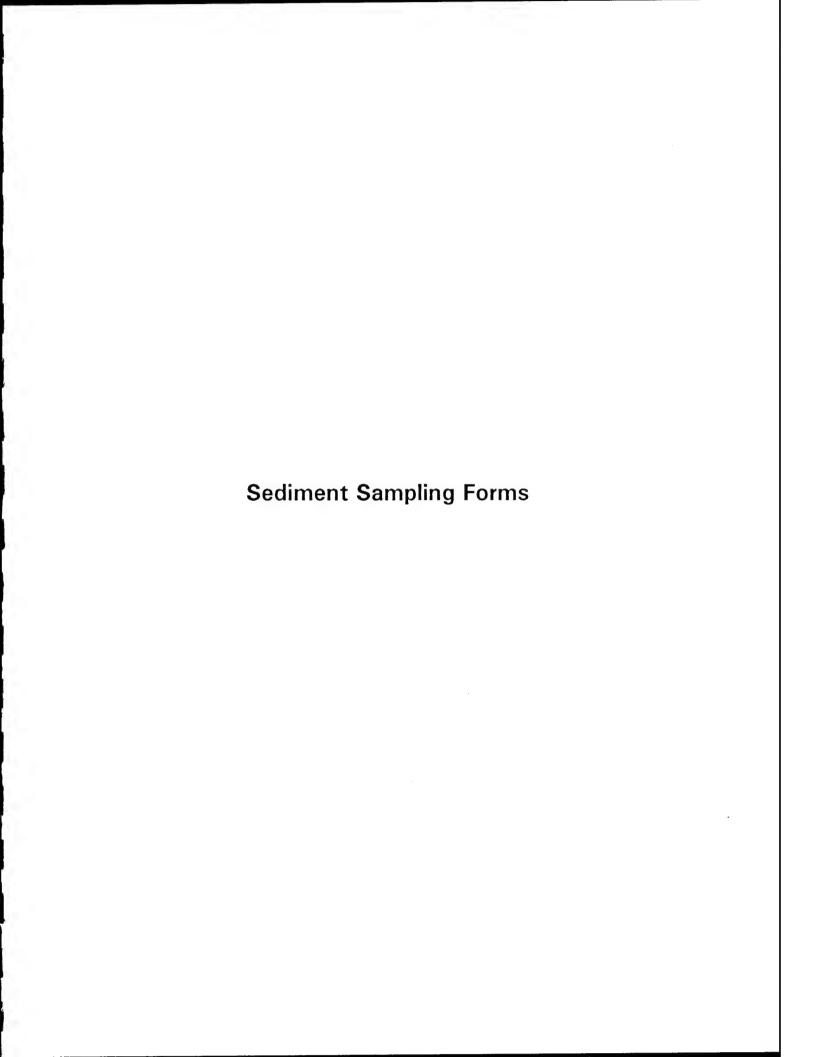


Project Name Alpena CRTC, MIANG Location Sinkhole, Southwest of Site 4 Site 4 - Surface drainage Recorded By PH Lay Checked By	Project Number 931800-12 Sample Number Polwoos (+) Duplicate Number Date Date
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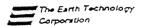
Sampling Point Location (sketch)	(Sre4)
North	
	POYWOOD Approximate Poywood Shorkline 7/28/93
	Shorkline 7/28/93
	Gully
anot to scale	

Before Sampling: pH EC Temperature	Water Parameters				
	 Before Sampling: After Sampling:	pH Pac Pac PAC PAC PAC PAC PAC PAC PAC PAC PAC PAC	EC 314 45/cm	Temperature 76,9°F	

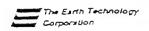
Analytical Parameter	Sampling √I Depth Fi	f Field Preservation Nered Method	Volume Required	Sample Bottle I.D.s
Vocs	Surface	HCL , 4°C	4x40mL glass	3000HEE
Svocs	Surface	, 4°c	2x 1 Liter glass	P040008
TPH	Sulface	HCL 4°C	1 x 1 Lites glass	P042008
ppmetals	Surface	14403 40E	1x llater plastic	PH W008
PP metals	Surface	V HNO3,4°C	1 × 1 stea plastic	P04W008F
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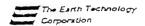
Project Name Alpena LRTC, MIANG Location Pholps Collow ANG Sw side of Bens Sample Number PIDOO! Recorded By Philage Duplicate Number Duplicate Number Checked By Site 1-POL Storage area Date
Sampling Equipment HAND Auger, Strawless Steel Spoods, auger handle w/ extensions. Sample Type Soil Sediment Rock Sample Type Description
USCS Soil Type Sp w/ organics Color none Odor Drk Brown Depth O-1
Number of Samples Comments
Sampling Point (sketch): SIMULU SIMULU SIMULU SIMULU APRIL SAMPLE SIMULU
Decontamination Equipment: Decontamination Fluids: Type Am Decontamination Fluids: Type Am Detergent/water Methanol Decontamination Fluids:



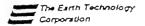
Project Name Alpena LRTC, Y Location Pholoscoling ANS SW F Recorded By 3#Lay Date & 9/13/93 Site 1-POL Sheare area	Part of Bas Sample Duplication Checken	Number 931800-12 Number P1002 1e Number P1004 d By
Sampling Equipment HAND Auger, Sample Type Soil Sample Type Description USCS Soil Type St Color Dek Brown Odor None Depth b-1' Number of Samples 2 Comments	Sediment Ro	,
Sampling Point (sketch): IT Tober Munder Ray NORTH NOR	PIDOOZ PIDOOJ D	SIMW12
Decontamination Equipment: Amager Type Amager Trowel Other	Decontamination Fluids: Steam/Hot Water Meth Detergent/water Hexa Potable Water HNO	ne 3 ; dīlution



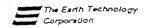
Project Name Alpena CRTC, MIANG Location Phalps Collins ANG - SW Port of Ba Recorded By 7#Lay Date 9/13/93 Site 1-200 Storage Area	
Sampling Equipment HAND Auger, Strainless Steel S Sample Type Soil Sediment Sample Type Description USCS Soil Type SP	ipoods, augen handle w/ extensions
Color Dek Brown Odor none Depth 6-1' Number of Samples Comments	
Sampling Point (sketch): SIMULI PIDOOB Lower Munder Bay NORTH	SIMWIZ JAGS STAFF GAULE
Decontamination Equipment: Hand auger Type Am	ater Methanol ter Hexane r HNO3; dilution



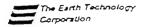
Project Name Alpena LRTC	MIANG	Project Number 931800-	12
Location Phelps Collins ANG	Sw part of Russ	Sample Number P1 D005	
Recorded By			
newices by 150		Duplicate Number	
Date 9(13/53		•	
Site 1- POL Storage area		Date	
			•
Sampling Equipment HAND Auger	, Strainless Steel Spood	5 auger handle w/ ext	2401212
Sample Type Soil	Sediment	Rock	
Sample Type Description			
USCS Soil Type 5	1		
Color Det Brow	~		
Odornone			-
Depth D-1			
Number of Samples _			
·			
Comments		-	
Complian Point (al. 111)	·		
Sampling Point (sketch):	16.10		
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NORTH NORTH ANDREWS		1993 Staff GAUGE	
NORTH TORNACE BOY			
0			•
morth to Scale		5	
Decontamination			
Equipment: 12 Hand auger	De∞ntamination Fluid	s:	
Type Am S	☐ Steam/Hot Water	☑ Methanol	
	Detergent/water	☐ Hexane	
☐ Trowel	Potable Water Deionized Water	☐ HNO ₃ : dilution	
☐ Other		☐ Other	



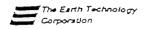
Project Name Alpena LRTC, Location Sinkholo, SW of Site Recorded By PALa, Date 7/22/93 Site 4 drawing of surface wat	Sample Number PCD01A Duplicate Number Checked By 7
Sample Type Soil Sample Type Description USCS Soil Type Sp Color Brown Odor None Depth O-1' Number of Samples	o w/ oreganics - Sticks, Leaves
Sampling Point (sketch):	Approximate Shoreline 7/28/9) POLDDOIA
Decontamination Equipment: Hand auger Type Ams Trowel Other	Decontamination Fluids:



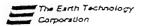
Project Name Alpena CRTC	MIANG	Project Number 931800-12
Location Sinkholo, SW of Site	4	
Recorded By PALay	•	Duplicate Number
Date 7/29(93		Checked By
Site 4 drawing of surface wet		•
	***	Date
Sampling Equipment HAND Auger	Strainless Steel Spoon	15 auger handle w/ extensions
Sample Type Soil	Sediment	Rock
		11000
Sample Type Description		
USCS Soil Type	p w/ organicm	cheerals
Color Lt Brown	to Brown	
Odor none		
Depth D-		
	1	
Number of Samples	,	6 6
_		flown from ments
or sep, POY	madi bortonoix	
Sampling Doint (alcotable		
Sampling Point (sketch):		
◆ North		
		Approximate
/		Shoreline 7/28/93
		70,048001
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that to Scale		Gally
المار العالم المار المار المار المار المار المار المار المار المار المار المار المار المار المار المار المار ا		
Decontamination		
Equipment: Hand auger	De∞ntamination Fluid	ds:
Type Am S	☐ Steam/Hot Water	☑ Methanol
☐ Trowel	Detergent/water	Hexane
Other	Potable Water Deionized Water	☐ HNO ₃ ; dilution
	EL DENHIZED Water	☐ Other



Project Name Alpena LRTC Location Sinkhele, SW of Sit Recorded By PALay Date #29/93 Site # drawing of sinface we	-24	Sample Number PO4D 602 A Duplicate Number Checked By
Sample Type Soil Sample Type Descript USCS Soil Type Color_dk brown Odor_none Depth_O_1	Sediment ion Sp w/ orginic p n-brown	Rock Rock Gichs, Leaves, grass)
Sampling Point (sketch): North		PO4BOOZA Approximate Shoreline 7/28/9) Gully
Decontamination Equipment: Hand auger Type Ams Trowel Other	Decontamination Flui ☐ Steam/Hot Water ☑ Detergent/water ☑ Potable Water ☑ Deionized Water	ds: Methanol Hexane HNO ₃ ; dilution Other



Project Name Alpena LRTC.	
Location Sinkhole, SW of Site	
Recorded By 74La	Duplicate Number
Date 7/29/93	Checked By
Site 4 drawing of surface wat	Date
13	
	Stronless Steel spoods, auger handle w/ extensions
Sample Type Soil	Sediment Rock
Sample Type Description	
	o w/ organics
Color Brun	
Odor Nowe	·
Depth O-l	
Number of Samples	
	et POYWOOZ, mouth of seep being.
Sampling Point (sketch):	
◆ North	
· · DK/A/	■P04D002B
,	Approximate
/	Shoreline 7/28/93
/	
`	
rnot to Scale	Gully
Decontamination	Providenta attendente Potta.
Equipment: X Hand auger	Decontamination Fluids:
Type Ams	☐ Steam/Hot Water ☐ Methanol ☐ Detergent/water ☐ Hexane
	17 E 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
☐ Trowel	Potable Water HNO ₃ : dilution



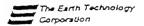
Project Name Alpena CRTC,	MIANG	Project Number 931800-12
Location Sinkholi SW of Site	4	
Recorded By PALay		Duplicate Number 7
1 - 20 00		•
		Checked By
Site 4 drawing of surface wat	<u> </u>	Date —
Same Friends HAND ALLES	Stranloss Steel son 1	5 auger handle w/ extensions
		·
Sample Type Soil	Sediment	Rock
Sample Type Description		•
USCS Soil Type Sp	woogan, cs	
Color_Ben-Dek B	•	
0dor_10108		
Depth _ <i>D</i> - 1 '		
·		
Comments at Loc	tation DMW003	2
	· · · · · · · · · · · · · · · · · · ·	•
	· ·	
`\S!F!\		
Sampling Point (sketch):		₹00003
North		
		Approximate
/		Shoreline 7/28/9)
\	,	
\		,
rnot to Scale		anly
1101 10368		
Decontamination		
	Decontamination Fluid	ds:
Equipment: D Hand auger	☐ Steam/Hot Water	☑ Methanol
Type AMS	Detergent/water	☐ Hexane
☐ Trowel	Potable Water	☐ HNO ₃ ; dilution
Other	Deionized Water	☐ Other

Form F1026

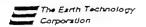
Deionized Water



0) 1.0-		
Project Name Alpena LRTC		Project Number 931800-12
Location Sinkhole SW of SIL	24	Sample Number P04 D004A
Recorded By PALay		Duplicate Number
Date 7/30/83		
Site 4 drawing of surface wa		Date
		Date
Sampling Equipment HAND Auger	, Strainless Steel spood	15 auger handle w/ extensions
Sample Type Soil	Sediment	Rock
Complete Trans Description		
Sample Type Description		
USCS Soil Type S		
Color Lt Brown		·
Odor None		
Depth <u>6-1</u>		
	1	
Number of Samples _		
	ted down from says	2 at P04D0048
and Pathony li	(3	-
Sampling Boint (classet)	**	
Sampling Point (sketch):		
North		
	\	\.
	<i>y</i>	
		Shoreline 7/28/9)
(,	. / Stocking gorge
\		
`	\	
. ,		
that to Scale		Gully
	-	
Decontamination	De∞ntamination Fluids	••
Equipment: Hand auger	☐ Steam/Hot Water	S
Type	Detergent/water	☐ Hexane
☐ Trowel	Potable Water	☐ HNO ₃ ; dilution
Other	Deionized Water	Other



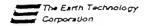
Project Name Alpena CRTC, MIAN Location Sinkhole, SW of Site4 Recorded By PALM Date 7-30-93	Sample Number Pau Doo4 B
Site 4 drawing of surface water	Date
Sampling Point (sketch): North	Approximate Shoreline 7/28/9) Porpoore Gully
Type Ams Stea	amination Fluids:



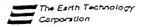
Project Name Alpena CRTC, MIANG	Project Number 931800-12
Location Sinkhole, SW of Site4	Sample Number POYDOOSA
Recorded By PALCY	Duplicate Number
Date 7/30/93	
Site 4 drawing of surface water	Date
Sampling Equipment HAND Auger, Stanless Steel Spoon	15 auger handle w/ extensions
Sample Type Soil Sediment	Rock
Sample Type Description	
USCS Soil Type SP w/some or sa	mics
Color Lt Brown	
Odor have	
Depth <u>D- I</u>	
Number of Samples 1	
Comments taken down from PO\$D	00 SR , P84 W 005
Sampling Point (sketch):	
North	
1.02(1)	
Jei -	
	Approximate Shoreline 7/28/9)
	Shoreline 1/28/13
	/ +
POUDOSA	Gully
not to Scale	<i>*</i>
Decontamination	:
Equipment: Hand auger Decontamination Fluid	ds:
Type AMS LI Steam/Hot Water	☑ Methanol
☐ Trowel ☐ Detergent/water ☐ Potable Water	☐ Hexane
Other Deionized Water	☐ HNO ₃ ; dilution☐ Other



Project Name Alpena LRTC Location Sinkhele, Sw of Sit Recorded By PALLy Date 1/30/93 Site 4 drawing of surface wa	Sample Number P646053 Duplicate Number Checked By
Sample Type Soil Sample Type Description USCS Soil Type Color_L+ Brwv- Odor_neve Depth_D-1' Number of Samples	Sp w/oegan.cs
Sampling Point (sketch): North	Approximate Shoreline 7/28/9) Po400058 Gully
Decontamination Equipment: Hand auger Type AMS Trowel	De∞ntamination Fluids: ☐ Steam/Hot Water ☑ Methanol ☑ Detergent/water ☐ Hexane ☑ Potable Water ☐ HNO ₃ ; dilution



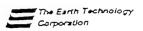
Project Name Alpena LRTC		Project Number 931800.	-12
Location Sinkhole, SW of Site	e4	Sample Number Po4 Dock	
Recorded By PALay	•	Duplicate Number	
Date 1/30/83		Checked By	
Site 4 drawing of surface wat		0.1001(00.0)	
		Date	
110.4			4
Sampling Equipment HAND Auger		15 janger handle w/ e)	xtensions
Sample Type Soil	Sediment	Rock	
Sample Type Description			
	Sp w/peganics		-
Color Brown			-
Odor - Rotten eggs	" Smell > guifur		
Depth _0 - 1 '	,		•
Number of Samples			
•		P240065, P24woole	
Comments	G0000 11000	Payboold, roywood	,
-	· · · · · · · · · · · · · · · · · · ·		,
Sampling Point (sketch):			
North			
I DETA			
	Jei		
			eximate
/	,		line 7/28/93
(,		/	
\	POYDOOGA		
`	POYDOOUN		•
rnot to Scale	1	Gully (
Decontamination			
Equipment: Hand auger	Decontamination Fluid		
Type AMS	☐ Steam/Hot Water	Methanol	
☐ Trowel	Detergent/water Detergent/water	☐ Hexane ☐ HNO ₃ : dilution	
	TUIADIE MALEI		



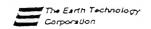
Project Name Alpena LRTC, recorded By PHLay Date 7/30/93 Site 4 drawing of surface water	4	Project Number 93186 Sample Number Po4 Duplicate Number Po4 Checked By	DIOGB
Depth <u>C> l'</u> Number of Samples 1	Sediment p. worganie. Whide odor-"Rotto	R∞k	· · · · · · · · · · · · · · · · · · ·
Sampling Point (sketch): North Portbooker			proximate noraline 7/28/93
Decontamination Equipment: Hand auger Type 1 MS Trowel Other	Decontamination Fluid Steam/Hot Water Detergent/water Potable Water Dejonized Water	ds: Methanol Hexane HNO ₃ ; dilution Other	



Project Name Alpena CRTC.	MIANG	Project Number 931800-12
Location Sinkhele, SW of Site	4	Sample Number 040007
Recorded By 74Lax	•	Duplicate Number
Date 4/3/193		Checked By
Site 4 drawing of surfaces wet	ite	Date —
		Date
Sampling Equipment HAND Auger	Strainless Steel Spoon	15 auger handle w/ extensions
Sample Type Soil	Sediment	Rock
Sample Type Description		
i e	to Blown	
Odor none		
Depth <u>b-l'</u>		
Number of Samples		
Comments taken a	t a Sand Boil	assoc, w/ seep.
		·
SIM		
Sampling Point (sketch):		
North		
	\	
		Approximate
		Shoreline 7/28/93
(-		
V	7040807 I	<u></u>
\		
and the same	1	Gully
rnot to Scale		
Decontamination	•	
Equipment: Di Hand auger	Decontamination Fluid	ds:
Type AMS	☐ Steam/Hot Water	☑ Methanol
□ Trowel	Detergent/water	☐ Hexane
Other	Deionized Water	☐ HNO ₃ ; dilution ☐ Other



Project Name Alpena LRTC, Location Sinkhele, SW of Site Recorded By PALay Date 7/3/(93 Site 4 drawing of surface water	4	Duplicate NumberChecked By
Sampling Equipment HAND Augur Sample Type Soil Sample Type Description USCS Soil Type Sp Color Lt Brown Odor Name Depth O - I Number of Samples Comments	Sediment	Rock
Sampling Point (sketch): North	PONDOOR	Approximate Shoreline 7/28/9) Gully
Decontamination Equipment: D Hand auger Type AMS Trowel Other	Decontamination Fluid Steam/Hot Water Detergent/water Potable Water Deionized Water	ds:



Project Name Alpena LRTC, m	TANG Project Number 931800-12
Location Sinkholo, SW of Site 4	
Recorded By PALay	Duplicate Number
Date 7/3/93	Checked By
Site 4 drawing of surface water	000.00 0
	Date
Sampling Equipment HAND Auger, St	ToiNless Steel spoods, auger handle w/ extensions
Sample Type Soil	Sediment Rock
Sample Time Description	
Sample Type Description	
USCS Soil Type 5P	
Color Lt. Brow - B	noun
Odor None	
Depth 6-1'- Asam	ple, ~3'8 sample
Number of Samples 2	1
· · · · · · · · · · · · · · · · · · ·	extected at 0-1' and PO400093
Collected @ 38'	CHECKER 27 11-1 20 180012
Checha e . B	
Sampling Point (sketch):	
North	POUDOCY
04146	
/	- Approximate
/	Shoreline 7/28/93
\	
rnot to Scale	Gully
Decontamination	De∞ntamination Fluids:
Equipment: La Hand auger	
	Steam/Hot Water Methanol Detergent/water Hexane
☐ Trowel D	Potable Water
	Deionized Water Other



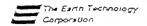
Project Name Alpena LRT Location Sinkhele, Sw of Recorded By PHLay Date 7/3/93 Site 4 drawing of surface	Site 4	Sample Number P64 DDIO(Back R) Duplicate Number Checked By
Sampling Equipment HAND Aug	ser, Strainless Steel Spoo	is auger handle w/ extensions
Sample Type Soil	Sediment	Rock
Sample Type Desc	cription	3.5-4'
USCS Soil Type	<u>Sp</u>	Sp
Color Lt Bro	run - Brown	Gray Bor own
Odor Nonc		noise
Depth _ O~ ('		3,5-4
Number of Sam	ples	1
Comments Po	10010A	POUDOIDB
North	POUDDID	Approximate Shoreline 7/28/9) Gally
rnot to Scale		
Decontamination Equipment: Hand auger Type Trowel Other	De∞ntamination Flu ☐ Steam/Hot Water ☑ Detergent/water ☑ Potable Water ☑ Deionized Water	r ⊠ Methanol ☐ Hexane ☐ HNO ₃ ; dilution



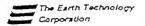
Project Name Alpena CRTC	MIANG Project Number 931800-12
Location Sinkhold, SW of SIL	
Based 20 241	Sample Number 191011
Recorded By PALCY	Duplicate Number
Date Office	Checked By
Site 4 drawing of surface wa	ter Date
Sampling Equipment HAND Augur	, Strainless Steel spoods, auger handle w/ extensions
Sample Type Soil	Sediment Rock
	ACC.
Sample Type Description	חס
USCS Soil Type S	ρ
Color Gry Brown	
	D10~
Odor nane	
Depth w@ 5	of water lot bottom sed
Number of Samples _	
Comments	
oonments	
Site.	
Sampling Point (sketch):	
North	
	. P04D011
	1047991
	- Approximate
/	/ Shoreline 7/28/93
(
\	
+not to Scale	Gully
THO TO SEAL	
Decontamination	•
	Decontamination Fluids:
Equipment: A Hand auger	☐ Steam/Hot Water ☑ Methanol
A A A	- Otean Phot Water La Methanol
Type Ams	Detergent/water
Type 76145	☑ Detergent/water ☐ Hexane ☑ Potable Water ☐ HNO ₃ ; dilution



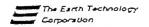
Project Name Alpena LRTC Location Sinkholo, Sw of Sinkholo, S	te4	Duplicate Number
Site 4 drawing of surface w	<u> </u>	Date
Sample Type Soil Sample Type Descript USCS Soil Type Color Color Brown Odor Nove Depth — S of Number of Samples	Sediment Sediment	\a_0.
Sampling Point (sketch): North	Po4Do	Approximate Shoreline 7/28/9) Gally
Decontamination Equipment: Hand auger Type Trowel Other	Decontamination Fluid ☐ Steam/Hot Water ☐ Detergent/water ☐ Potable Water ☐ Deionized Water	ds:



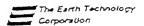
Project Name Alpena LRTC, MIANG	Project Number 931800-12
Location Sinkhole SW of Site4	
Recorded By 74 Lay	
1 V/11 A 3	
1 c: 4 d :	
Site - areway at surface water	Date
Camera Tana HAND Disco Structure Structure	
Sampling Equipment HAND Auger, Strawless Steel Spoon	15 auger handle w/ extensions
Sample Type Soil Sediment	Rock
Sample Type Description	
USCS Soil Type St	
Color Brown	
Odor <u>none</u>	<u> </u>
Depth at Botton of sinkhole ~	l'ofsed
Number of Samples	
Comments	
	<u> </u>
Same Parket and Same	
Sampling Point (sketch):	
North	
P04 D013	
	Approximate
	Shoreline 7/28/93
(,	
rnot to Scale	Gully
Decontamination	
Equipment: Hand auger Decontamination Flux	
Time AMS LI Steam/Hot Water	Methanol
Detergentwater	Hexane
☐ Other ☑ Potable Water ☐ Other	HNO ₃ : dilution
— Other————————————————————————————————————	☐ Other



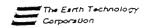
Project Name Alpena LRT Location Sinkhele, SW of S Recorded By PHLay Date 8/1/93 Site 4 drawing of subace	ite4	Duplicate Number Checked By
		5 , auger handle w/ extensions
Sample Type Soil	Sediment	Rock
Sample Type Desc	ription	
USCS Soil Type	•	
Color Brown		
Odor none		
Depth 1' of se	dimit	······································
Number of Samp	les 1	
Comments		
Sampling Point (sketch):	514.47	Por Doly Shoreline 7/28/93 Gully
rnot to Scale		
Decontamination Equipment: D Hand auger Type Ams Trowel Other	Decontamination Flui Steam/Hot Water Detergent/water Potable Water Deionized Water	ds: Methanol Hexane HNO ₃ : dilution Other



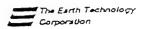
Project Name Alpena LRTC, MI	A.17
Location Sinkhole, Sw of Site 4	
Recorded By PALa	•
1 5- 9/11/75	Duplicate Number 7040115
Site 4 drawing of surface water	Checked By
Sie Thi sway as another	Date
·	
Sampling Equipment HAND Auger, Stran	wless Steel spoods, auger handle w/ extensions
l	Sediment Rock
Sample Type Description	
USCS Soil Type Sq 41 a	tekamir k
Color_Brown	
Odor	
Depth water dept ~ 3.	5' - l'afredunt
Number of Samples 2	. 07
Comments	
COMMENS.	
Sampling Point (sketch):	
North	
	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \
	Approximate
/	Shoreline 7/28/93
(115
\	P04D015 \$/1/83
not to Scale	Gully
Decontamination	
	ontamination Fluids:
Equipment. La hand auger	iteam/Hot Water
□ Type □ ☑ D	etergent/water
□ Howel	otable Water
	eionized Water



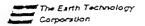
Project Name Alpena LRTC Location Sinkholo Sw of Si Recorded By PHLay Date 8/1/13 Site 4 drawing of surface w	te4	Duplicate Number
Sample Type Soil Sample Type Descrip USCS Soil Type _ Color_dek Grey Odor_Strose_For Depth_9'of we	Sediment Sediment Sediment Sediment Sediment	
Sampling Point (sketch): North	POUDOIL	Approximate Shoreline 7/28/9) Gally
Decontamination Equipment: Hand auger Type AMS Trowel Other	De∞ntamination Flui ☐ Steam/Hot Water ☒ Detergent/water ☒ Potable Water ☒ Deionized Water	ds: Methanol Hexane HNO ₃ ; dilution Other



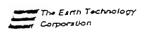
Project Name Alpena LRT Location Sinkhola, SW of S Recorded By PALay Date 8/193 Site 4 drawing of surfaces	Site4	Duplicate Number
OILE THE PARTY OF	wo!!	Date
Sample Type Soil Sample Type Description USCS Soil Type Color Gry-Bri Odor Fetch on Depth 13' of a	Sediment Sipping of Sediment Sipping of Sediment Some of Sediment Sediment Sipping of Se	
Sampling Point (sketch):	Po4Del7	Approximate Shoreline 7/28/9) Gally
rnot to Scale		
Decontamination Equipment: Hand auger Type Ams Trowel Other	De∞ntamination Flui ☐ Steam/Hot Water ☑ Detergent/water ☑ Potable Water ☑ Deionized Water	



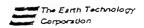
Project Name Alpena LRTC, Location Sinkhele, SW of Site Recorded By PALL Date 8/1/93 Site 4 drawing of surface wat	4	Project Number 931800-12 Sample Number Poul DDB Duplicate Number Checked By Date
Sample Type Soil Sample Type Description USCS Soil Type 5C Color dek Grey Odor Slight had Depth 19' of water	Sediment w/ seconics rocarbon odor	
Sampling Point (sketch):	■P240018	Approximate Shoreline 7/28/9) Gully
Decontamination Equipment: Ams Type Ams Trowel Other	Decontamination Fluid Steam/Hot Water Detergent/water Potable Water Deionized Water	ds:



Project Name Alpena LRTC Location Phelps Collins AN Recorded By PHLA Date 8/17/93 Site LF 6	6-Loudfill	Sample Number PO6DO1 Duplicate Number
Sample Type Soil Sample Type Descrip	Sediment	Rock nuck-
Odor <u>Fetech - sa</u> Depth <u>O - 1'</u> Number of Samples Comments	5	
Sampling Point (sketch): Noeth Site (Brown HANGE LH HANGE TO Scale	PleDO1	worth pools restrent pools 111 111 111 111 111 111 111
Decontamination Equipment: D Hand auger Type Am Trowel Other	Decontamination Fluid ☐ Steam/Hot Water ☑ Detergent/water ☑ Potable Water ☑ Deionized Water	ds:



Project Name Alpena LRTC, MI Location Phelps Callins Aug - LANG Recorded By PHLay Date 8/17/93 Site LF 6	Fill Sample Number POG GOO Z
Sample Type Soil (Sample Type Description	Sediment Rock asphalt and Hura Fillromaterial
Sampling Point (sketch): Ple DO ? Bedwitte All of Lake wind Anot to Scale water	W W
Equipment: D Hand auger Type AMS Trowel	Steam/Hot Water Methanol Detergent/water Hexane Potable Water HNO3; dilution Deionized Water Other



Project Name Alpena LRTO Location Phelps Collins An Recorded By 7+Lay Date 9/17/93 Site LF 6		Project Number 931800-12 Sample Number P6003 Duplicate Number P6004 Checked By Date
Sample Type Soil Sample Type Descr	ription Sand and Clay will on	S, auger handle w/ extensions Rock
Sampling Point (sketch): Noeth Site PGDG3 PGDG PGDG AW & L	PODOZ L Lester Winder Wester waster Water treat mentioned	wester post
Decontamination Equipment: Hand auger Type Am Trowel Other	Decontamination Fluids Steam/Hot Water Detergent/water Potable Water Deionized Water	s:s:s:s:

Appendix G: Monitoring Well Development and Sampling Forms

10 -

Equipment Information Bailer No. Pump No. Interface Probe No. Sounder No. pH Meter No. Conductivity Meter No. Thermometer No.	Remarks (e.g. water clarity)	medaly medaly medaly mudely	
ation /	Water Level (feet)	79"	h5'/
Well Inform St. A. J. S. Se. 1 S. Se. 1 Soc Act. Impoint Ind. 1.5 Ind. 1.3 Ind. 1.4 Ind	Gallons Dev./Purge Before Meas.	5	
	Settleable Solids (ml)		
(Well Mouth) (Water) 20 10 Press 1	Turbidity	1 / /	
93/8600 Extracted Extracted Led fac as	Cond. µmhos/cm	28h 08h 78h 743	
Project No.	рН	7.40	
	Water Temp. In C	252 255 255 255 255	
Project Name Phelps Cellins ANG PID/FID Readings (Ambien Static Levels Pump (B./Bail Rate (Produc Water Column Length (1,5) Disposition of Discharge Water Conductive	Flow Rate (gpm)	11: tufailer 11: tufailer 11: tufailer 11: tufailer	
Project Name Phale PID/FID Readings Static Levels Pump D./Bail Rate Vater Column Length / Disposition of Discharge Water Capacity	Tima (24 hr.)	1421 1423 1430 1437 1433	प्रथ न्यू

 $14.405 - 1.11 \text{ tongth of } 4^{\circ} = 0.087 \text{ ft}^{3}$ or 0.65 gal1 ft longth of 2" = 0.022 ft 3 or 0.16 gal

Checked By Recorded By_

Dato 9/ Date

Form F-1003 9/1/91

th Technology 7 th Tock Cosporation

Well Development/Purge Log

Pump Broken

0

Equipment Information Conductivity Meter No. Interface Probe No. Thermometer No. Sounder No. pH Meter No. Bailer No. Pump No. Well Information Number SIMU Ground Elev. 4.14 Well Material PV C Elev. Datum Point Location Site Well Depth 13 Datum Toc. Well Diameter_ Hrs. (Well Mouth) (Wator) Well Volumes Extracted 20805 and sampled For disposa (gpm/ft. drawdown) After Total Gal. Extracted Project No 9 31 800 (Ambient) (Product) Disposition of Discharge Water Contoursers Project Hama Phylos Collins ANG Pump M /Bail K Rate PID/FID Readings Specific Capacity. Static Levels

	Remarks (e.g. water clarity)			~ urlold	Madely	Meddy	madal	muddy,							
	Water Level (feet)														
	Gallons Dev./Purge Before Meas.			7	2	2 /	1	0							7.7
	Settleable Sollds (ml)														Bocordod By Ar
	Turbidity		1	\	1		(
	Cond. µmhos/cm	100	4000		huh	375	358								
_	рН		15'2	2.4.2	14.5	7.36	17.6								
	Water Temp, In C		18.	16.7	1.7.1	17.6	7.5								65 gal
	Flow Rate (gpm)	160	11.12	16,tex Bail	16.42 / De:1	12,tw/Bai	1 61 tw/ Bail								Posters 1 It longth of 4" ≈ 0.087 ft3 or 0.65 gal
	11mo (24 hr.)	2711	1	9511	72511	1155	1156				And the state of t			The state of the s	retes 1 It longth of
									 	 	-	 	 		

Form F-1003 9/1/91

Date

Rocorded By DEJayus

Checked By

Till length of 27 ± 0.022 ft 3 or 0.16 gal

Page 1 of

Equipment Information Bailer No. Pump No. Interface Probe No. Sounder No. PH Meter No. Ho Ecot Zois Conductivity Meter No. ET Thermometer No. Harecott zois	Remarks (e.g. water clarity)	1	5/26/4 Clo	11	C/Par						
intion 3	Water Level (feet)					4.01	3,97	3.92			
Number Simw:3 Location Sive! Datum Tec/aetch Elev. Datum Poin! Ground Elev. 3:79' Well Depth 13.18' Well Material PVC	Gallons Dev./Purge Before Meas.		75	15	17.5						
	Settleable Solids (ml)		1	1							
(Well Mouth) (Water) (S Z Ksgossd	Turbidity	1	l	(1						
731800 xtracted = 44 For swn) Atter	Cond. µmhos/cm	904	403	398	358						
3,79' 3,79' Total Gal. E	ЬН	8,0	2'2	7.48	86.9						
	Water Temp. In C	16.3	16.3	16.7	9'9/						
Project Name Phelps Cellins ANE PID/FID Readings (Ambie Static Levels (Produstrency) Pump X /Bail Rate Vater Column Length 9,39 (Disposition of Discharge Water Celumn Specific Capacity	Flow Rate (gpm)	2.5cp.m	2,5	2.5	2.5						
Project Name Phelos Cell PID/FID Readings Static Levels Pump X /Bail Rate Valur Column Length 7.39 Disposition of Discharge Water C	Титхо (24 hr.)	17260	6760	6 933	0931	0435	0636	4634665		- Commence of the Commence of	

Plates 1 ft longth of 4° = $0.087 \, \text{ft}^3$ or $0.65 \, \text{gal}$ 1 ft longth of 2° = $0.022 \, \text{ft}^3$ or $0.16 \, \text{gal}$

Rocordod By DRJayna-Chocked By PACa

Date 8/26/13

Tothnology Corporation

Well Development/Purge Log

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Mary market

Equipment Information Conductivity Meter No. Interface Probe No. Thermometer No. pH Meter No. Sounder No. _ Ритр No. Baller No. Just N. Well Information Well Depth 13, 24 Ground Elev. 3134 とのとい らなっ Well Diameter 3" Elev. Datum Point. Well Material _ Location _ Number Datum__ (Well Mouth) Hrs. (Water) (gpm/ft. drawdown) After Total Gal. Extracted Well Volumes Extracted constainerized on sampled Project No_ (Ambient) (Product), Propect Name Pholos GILLS ANG 6.0 Disposition of Discharge Water_ disposal Pump | 18ail A Rate Water Column Length ___ PID/FID Readings __ Specific Capacity_ Static Luvels

Remarks (e.g. water clarity)	, John W.	The state of the s		\perp	Twist (very	Imsid /								
Water Level (feet)			(i	4.38							
Gallons Dev./Purgo Before Meas.		5	10		25									October 10 Action
Settleable Solids (ml)	1		1	((-			a F sprood
Turbidity	1	1	1	1	1				-					
Cond. µmhos/cm	279	217	7269	255	hs2									
pH	8.9	7.95	20.8	8.02										
Water Temp, In C	0.20	25.0	52	57	25									65 gal
Flow Rate (gpm)	10 testaile	1 ctey acieu	1 they aire	11 tay Rile	16; ten Beilan									4" = 0.087 ft3 or 0.1
Тито (24 hr.)	9051	1509	1513	1516	1519	15.20					- Control of the Cont			Ticlus 1 II lungth of 4" = 0.087 [13] or 0.65 gal

Farm F-1003

Date

Rocorded By DEJayne

It lungth of $2^{\circ} = 0.022$ ft 3 or 0.16 gal

Equipment Information Baller No. Pump No. Interface Probe No. Sounder No. PH Meter No. Conductivity Meter No.	Remarks (e.g. water clarity)	Sythy Clean	Date 2/10/43 Form F-1003
matlon 4.17	Water Level (feet)	4,33 4,3 4,3 4,3 6	8 9
Well Information Number Strub & Location Strk Datum Toc Elev. Datum Point Ground Elev. #177 Well Dlameter 2* Well Depth 14,9	Gallons Dev./Purge Before Meas.	16	1By Orthing By Paterch (
	Settleable Solids (ml)		Recorded By Checked By
(Water) 3/ 12 Hrs.	Turbidity NTU		9
	Cond. µmhos/cm	371	had notheasle 'n colon
Project No 93/800	PI4	5.3 8.3	0 - i
(Ambient)	Water Temp, In G	63.3	
S Collins S Collins S Collins	Flow Rate (gpm)	3.55pm 390m 350m	
Project Name Phys Clling PIO/FID Readings Static Levels Pump M /Bail Rate //ffe Water Column Length Disposition of Discharge Water Spucific Capacity	Титы (24 hr.)	5551 5551 5551 1551 1561	14-163 1 H langth of 4" = 0.087 H3 H3 H3 H3 H3 H3 H3 H3 H3 H3 H3 H3 H3

Equipment Information Baller No. Pump No. Interface Probe No. Sounder No. PH Meter No. Conductivity Meter No. Thermometer No.	Remarks (e.g. water clarity)	T., k., l	51. At. do.	700.0								9/10/91	111
3,27	Water Level (leet)				3.59	3.50	3.46						
Number 4m 01/ Location 5ve/ Datum 70C Elev. Datum Point 3, 3 Well Diameter 2/ Well Depth 15/C	Gallons Dev./Purge Before Meas.		12.5	61								V NE James	14/1
	Settloablo Sollds (ml)											Recorded By	Checked By
(Well Mouth) (Water) 2 33 11.5 4.5pase (Turbidity												
06 P	Cond. µmhos/cm	519	250	209									
Project No 93(86) 3.37 Total Gal. Extracted. Well Volumes Extracted. Project Sample of Fer (gpm/it. drawdown) Atter	Hd	7.29	7.05	7.08									
	Wator Tomp, In C	7.29		66.9								or 0.65 gal	or 0.16 gal
Project Hame Plulps Collins ANG PID/FID Readings Static Levels Pump R. /Bail Rate Grand Res Water Column Length Disposition of Discharge Water Candaria	Flow Rate (gpm)	MY Som	1,5	L36-									l II lungth of 2° ≈ 0.022 ft 3 or 0.
Project Name PLL P PID/FID Readings Static Levels Pump R /Bail Rate Water Column Length Disposition of Discharge	Limo (24 hr.)	1137	1142	2 2	1148	4	0511				- 1	Hotos 1 ft langth of	า แลกดูเห อา

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Baller No. Pump No. Interface Probe No. Sounder No. PH Meter No. Conductivity Meter No. Thermometer No.	Remarks (e.g. water clarity)	No parameters take beause	moder was broken					Date 9/12/93 Form F. 1003
matlon 4.	Water Level (feet)		6.46	64.9				
Well Infor- SIMULI Sright TOC IUM Point TOC Ineter 2" The String Tock	Gallons Dev./Purge Before Meas.		240					Recorded By DE Jay 100 Checked By PM Can
	Settleable Solids (ml)							Recorded By DE Checked By 利息
(Well Mouth) (Water) 40 -9.0	Turbidity							
731800 xtracted 4 tracted ~9 tracted ~9 tracted ~9	Cond. µmhos/cm							in well next
Project No (1) (6.34/1) (6.34/1) (9.34/1) (9.34/1) (9pm/ft. drawdov (9pm/f	Hd.							100 : 400 st. 100 st.
(Ambient) (Product) Well (9p)	Water Temp. In C							2
Project Hame Plates (allins AN6 Properties Project Project Hame Plates (Ambient) State Levels Pump & Bait Bate Count Eoc Took Ball Discharge Water Column Length Disposition of Discharge Water Conducted Conduction Specific Capacity Specific Capacity (gpm/	Flow Rate (gpm)	3,55pm						Thatas 1 It longth of 4" = 0.087 ft3 or 0.65 gal
Project Name Plate Project Name Plate Project toyols Primp Rail Rate Water Column Longth Disposition of Discharge	Ттю (24 hr.)	0450	100%	1000				Theres I It length of
	G-G	.						

Page of	Date 8/25/13	Checked By All (and		
	- Pit Moter Number (20-40-40-50-50-50-50-50-50-50-50-50-50-50-50-50	- Ihermometer Number " " " - Casing Diameter 2"	- Average Discharge Rate	
Project Name Phulps Collins ANG Project Number 93/800	Datum Point Toc. Elevation of Datum Point	Static Wa	Total Gallons Extracted 40	gpm/lt. of draw down after———hours
Project Name Phulps Callins	Location New to Lot	Equipment	Water Column Disposition of Dischame Water	1 1

Remarks	(e.g. clarny)		2002	Ces	Own tare	Jaken Hake	are much hot operties	Despely					
Water Level													
Gallons Dev/Purge Before	меаѕ.			40			-	-					
Turbidity		1000					•						
Cond, µmhọs/cm													
Hd										-			
Water Temp. In C°	277	44.5											
Flow Rate	* C.C. 2.7	2 - W. A. P.	7.0.7			-							
Tlmo (24 hr.)	(, ,	0///	1727										

Notes: 1 ft length of 4" = 0.087 ft or 0.65 gal 1 ft length of 2" = 0.022 ft 3 or 0.16 gal

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Page__

Project Name Phelps Cellins ANG Project No 931800	Number MCZ mw 7	Equipment Information
Static Levels 4.95 Dr.7 (Product) rear 6.93 (Well Mouth) Static Levels 8.83 (Well Mouth) Pump 18.78 Maler Total Gal. Extracted 2.25 Water Column Length 7.85 (Well Volumes Extracted 6.6 Disposition of Discharge Water Confairmed 1.90 (Media)	Location Control Datum To Custer Elev. Datum Point To Protect Ground Elev. 6. 45 Well Diameter 2"	Bailer No. Pump No. Interface Probe No. Sounder No. PH Meter No. 地名Ce者 2015
(gpm/ft. drawdown) After Hrs.	Well Material PVC	Conductivity Meter No. ET Thermometer No. 2015 M210

Remarks (e.g. water clarity)		- addy	metal Cron	داوس								
Water Level (feet)				1.7	1.1	6.98						
Gallons Dev./Purge Before Meas.												
Settleable Solids (ml)												
Turbidity		1										
Cond. µmhos/cm	365	3.71										
Hd	7.85	7.8										
Water Water Temp. "	65.4 16.1 1.85	16.3										
Flow Rate (gpm)	3900	Z.586m	7									
Тіто (24 hr.)	0838 Met	2/180	0895	2480	0847				and the second			

Notes. 1 ft length of $4^{\circ} = 0.087 \text{ ft}^{3}$ or 0.65 gal 1 ft length of $2^{\circ} = 0.022 \text{ ft}$ or 0.16 gal

Recorded By DFJay ve Checked By FB (o

Date 6/28/93

Form F-1003 9/1/91

Page of		Bosondad Ders.	15. Chackad By	Date			
ה יו	トロー PH Motor Number - 1820 日 101	Conductivity Meter Number FT	Thermometer Number Hatto #2015 Checked By	Casing Diamotor 3	Average Discharge Rate	Woll Volumes	
	Project Num	Acad Flaveling of Police Prince	DayPurga Mathod Condition on Right Static Water Laval 15 08	Well Depth 32.20			- gpm/lt. of draw down after-
11/2/17/19	Woll No. C63 m 26	Location Courty Garage	Dav/Purge Method CLILLIST	Equipment	Water Column	Disposition of Discharge Water	Specific Capacity

	Remarks (e.g. clarity)	(fundamental)	v	1 m Si (51,541/2 C/en									
	Water Level (feet)						/ <./3							
	Gallons Dev./Purge Before	Meds.		~	2 2	れみら		-	-					
	Turbidity NTU		1					7						
	Cond. µmhos/cm		7.74 550	474	UCS									
	ЬН		7.74	122	11	1								
	Water Temp. In C°	,	27.2	74.2	13.0									
	Flow Rate	27.00	width and	> 4Pm	7 gpm									
i	11ma (24 hr.)	1437	60.	1430	1433	1433								

Notes: 1 It length of 4" = 0.087 It 3 or 0.65 gal 1 It length of 2" = 0.022 It 3 or 0.16 gal

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Page_

Sounder No. Hatco# 2555 Equipment Information Conductivity Meter No. TETC Thermometer No. TETC PH Meter No. TESTC Interface Probe No. Bailer No. Ритр No. Location County Guage 14.51 Well Information Number CG3MW7 Well Depth 22.60 Elev. Datum Point Datum 700 Ground Elev. __ Well Diameter_ Well Material Hrs. (Well Mouth) (Water) Project No 93/800 -12 Total Gal. Extracted = 15 1- 5 5 gallon chu (gpm/ft. drawdown) After Well Volumes Extracted Disposition of Discharge Water Condennes (Ambient) (Product) Propert Name Phulps Collins ANG Pump & Bail | Rate Grand Fles 8.09 Water Column Length _ PID/FID Roadings _ Specific Capacity_

Static Levels

Remarks (e.g. water clarity)	Tursid
Water Level (feet)	
Gallons Dev./Purge Before Meas.	
Settleable Solids (ml)	()
Turbidity NTU	1
Cond. µmhos/cm	835
рН	7,62
Water Temp. In ぐト	29.4
Flow Rate (gpm)	2.5gpm
Timo (24 hr.)	ohbo

	- H	'un sid	moderately Close													
(1991)					,	14.58	25.41									
Moas.	1		0/	151												
	(1								1	1					-
	1		1													
	835	700	100	755												
	797		\top	7.33										_		
	29.4	1 40		0.00												
	2.5gpm	2.5 50	Jr.	5.7												
	0440	7460		0440	6447		0440			,		Simplemanian at an .	of contraction of the contractio			

 $t_{\rm totos} = 1.01 tongth of 4^{\circ} = 0.087.03 \text{ or } 0.65 \text{ gal}$ 1 It longth of $2^{-} = 0.022$ It 3 or 0.16 gal

Recorded By JETEYAL Checked By

Date Date

Form F-1003 9/1/91

•	Date 8/25/93 Checked By DFT yr Checked By Date 8/25/93	
ליייניין מואני דיחל	- PH Meter Number flosco # 3083 - Conductivity Meter Number "" - Thermometer Number "" - Casing Diameter 2" - Average Discharge Rate 1,59pm	
	Project Numbor 93/800 Datum Point Elevation of Datum Point 700 Static Water Lovel 6.74 Well Depth 16 Total Gallons Extracted 3/	
	Project Name The pes Collins ANG Well No. St & MWS Location Dovruge Method Bailer Equipment 2' 6- Um Peus Pung Water Column Disposition of Discharge Water	
	المعود	

Specific Capacity ______ gpm/ft. of draw down after_____ hours

Romarke	(e.g. clarity)		musldy	modi	d		51,24t, dear	slightly alew	101.2	Clem						
Water	(1001)				1			i	1	1	1.98	7.4.	7.7,	7.00.7	6.98	
Gallons Dov/Purgo Before	Meas.		1	6/	103	1	THA .	17 5502	27	7 ,	7					
Turbidity		100/4	00-1	00012 21000	000/+	+1000	700	9001	747	151						
Cond. pmhos/cm		0,670	0170	210:0		D.564	7.55 0 524		0,000	0.556						
Hd		2.49	1 67	7 / 1	(4)	5.5.5	7.55	7	5:1	1,61						
Water Temp. In C•		25.4	27,7	7.5.4		155.	25.3	27.4		27.9						
Flow Rate		1.5gg~	1.500 m	(1574 Pm		1.271 m	1.54Pm	1. Sgpm	1 15.00	mdfc,,						
TIma (24 hr.)		(10/	9101	8/0/	120		520)	1201	140		1037	در ۱،	7201	1635		

Notes: 1 ft length of 4" = 0.087 ft³ or 0.65 gal 1 ft length of 2" = 0.022 ft³ or 0.16 gal

5 Recorded By 252 Dato 8/25/93 Page_ Checked By Date _ pli Moler Number Harcoff 3083 Conductivity Meter Number Casing Diamoter 2" Average Discharge Rate. Thermometer Number — Well Volumes hours 6.78 Elevation of Datum Point. Total Gallons Extracted Well Depth 15.4 Static Water Level _ Project Number_ Datum Point_ gpm/ft. of draw down after-Project Name Pholps Collins ANG DOV/Purgo Mothod Grundzus Disposition of Discharge Water -SFS MW6 Specific Capacity Water Column Equipment _ Well No. -Location _

Romarks (e.g. clarlty)		V V	muddy	mucley	mudoly		maky	muddy	1	ollowelly clean	slightly dem	Rush year						
Water Level (feet)					1	1			1	1		\	7.36	7 10	0/1/	7,06	7.03	
Gallons Dev./Purge Before Meas.					ره	25.5	7 8 7	2000	3/	7,0	(, 55)	76						
Turbidity NTU		Hoos	1 1000	000/ +	2001+	7/000	+1,000	1.50%	4/000	004/	540							
Cond. µmhos/cm		725,0	0.240	7,53 6.2%		0.309	0,3/8	T	0,3%	2,61 0.330	7.57 0 374							-
pH		2,58	7,62	7.53	5	7.57	7.6	7 410	63 .,	192	7.57)						
Water Temp. In C•		26.1	30,2	7.90	1	81.X3	27.2	8.8	0 0	7.50	25.4							
Flow Rate		2960	1,59pm	1.59pm	1	1. 3 gpm	1.59pm	1.59pm		1,5gpm	1.570-	•						_
Tima (24 hr.)		0/10/	1045	1049	7.20	1.007	1058	1/07	\	30//	2///	ħ>//	7.1	6777	3111	L = -		

Notes: 1 ft length of 4" = 0.087 ft³ or 0.65 gal

1 ft length of 2" = 0.022 ft 3 or 0.16 gal

The Earth Technology Corporation

Well Development/Purge Log

Date 8/25/13 Recorded By Description Checked By Place	
PH Meter Number HAZCO# 3083 Conductivity Meter Number " Thermometer Number " Casing Diameter 2" Average Discharge Rate (57per)	
Project Number 931800 Datum Point TeC Elevation of Datum Point Stalic Water Level 7.69' Well Depth 16' Total Gallons Extracted 30.5	9Pm/It. of draw down after
Project Name The ps Collins ANG Project Number 931800 Well No. 5 F5 mw 7 Location Second fine training number Elevation of Datum Point Devipment Strange Method Grundleus Pump Static Water Column Water Column Discharge Water — Total Gallons Extracted Disposition of Discharge Water — Total Gallons Extracted —	Specific Capacity gpm/ft, c

	Romarks	(e.g. clarify)		Faudda		maddy	1 171 19	31年17日か	D1744 C/2.				
	Water Level	(10-1)		1)		l					2.79	7.75
	Gallons Dev/Purge Before	Meas.			7	1.3	0.0 N	ç	۷,	22.7			<u>.</u>
	Turbidity NTU		00414	0001	()09/+	12 /	× 360	20	2	(77)			
	Cond. µmhọs/cm		7,55 0,181		181.0 791	757 0172	- 1	7.51 0 187		1,36 0,176			
	Hd		2,55		1901	757		7.59	1	9617			
	Water Temp. In C•		5'62	797	0:0	29.6		1.62	2* .	10,1			
	Flow Rate		1.5.560	1,5		5.7		7.5	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \				
	Time (24 hr.)	04.11	011	1133		1(37	127	111	1145		- 7-7	1148	
_				_				-			!-		

Notes: 1 it length of 4" = 0.087 it 3 or 0.65 gal 1 it length of 2" = 0.022 it 3 or 0.16 gal

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Equipment Information	Baller No. Pump No. Interface Probe No. Sounder No. pH Meter No. Conductivity Meter No. Thermometer No.
Well Information Number SSMW &	Location 5.46 5 Datum To C Elev. Datum Point Ground Elev. 7.08 ' Well Diamoter 3'' Well Depth 32.04 Well Material
6 Project No 93/800-12	Static Levols (Well Mouth) Static Levols (Well Mouth) Static Levols (Well Mouth) Static Levols (Well Mouth) Static Levols (Well Mouth) Static Levols (Water) Static Conductor Co
Propertitume phylos Collins ANG	Static Levels Static Levels Pump & /Bail Rate Grand Fos Water Cotumn Length Disposition of Discharge Water Gender

	lima (24 hr.)	Flow Rate (gpm)	Water Temp, In C	Hd	Cond. µmhos/cm	Turbidity NTU	Settleable Sollds (mt)	Gallons Dev./Purge Before Meas.	Water Level (feet)	Remarks (e.g. water clarity)
	6									
	0.620	2.59pm								No personale is the
	0826	2.59pm								Tank Sing
								15		weer was broken.
	6700	2.59pm						23.5		(0:)
	0830								7 11	S
	0021								4117	
-	500								7.12'	
					-					
-	- manufacture of the state of t				at .					
_i										
_	leters 1 ft longth o.	Placture 1 It langth of 4" = 0.087 [13] or 0.65 nal	65 nal							
	1						Becorded	Recorded By A Class		50/57/0

Form F-1003 9/1/91

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Recorded By DETayno Checked By PHCay

) It length of $2^{\circ} = 0.022 \text{ It 3}$ or 0.16 gal

th Technology I th Toch

Well Development/Purge Log

Page

Form F-1003 9/1/91 NO parameters taken belause Equipment Information (e.g. water clarity) Conductivity Meter No. Remarks meter was broken Interface Probe No. Thermometer No. pH Meter No. Sounder No. Pump No. Baller No. 100 Water Level (feet) 7.32 7.36 tus, 0 - Car Well Information Number SSMW9 Well Depth 20,7 Elev. Datum Point Ground Elev. 7.33 Recorded By Stayne Dev./Purge Location size 5 Gallons Before Moas. 33.5 Datum Toc Well Dlameter_ Well Material Settleable Solids <u>E</u> (Well Mouth) H.S Turbidity NTU (Water) my/soumi insposition of Discharge Water Confaraterized in 55 gallen discharge (gpm/ft. drawdown) After Cond. Total Gal. Extracted Well Volumes Extracted Project No 93/800 Ξ (Ambient) (Product)_ Water Temp. In C 1 It length of 2" = 0.022 ft 3 or 0.16 gal $R_{\rm Clus}=1.11$ langth of 4° = 0.087 ft3 or 0.65 gal Propect Harns Pholos Colline ANG Flow Rate (md6) 2.55pm 2.59pm Pump X /Bail | Rate Water Column Length_ PID/FID Readings Specific Capacity Static Lovels fima (24 hr.) 8780 08580 0859 28 56

PHCay

Checked By

Recorded By DFE Date 8/25/93 Checked By. Date -3083 PH Motor Number Hatco + Conductivity Meter Number-Average Discharge Rate_ Thermometer Number— Casing Diameter __ Well Volumes Elevation of Datum Point Tac hours Statle Water Level 12. 24 Collins ANG Project Number 93/800 Total Gallons Extracted Datum Point Well Depth_ gpm/ft. of draw down after-DovPurge Method 2" Grundles Redylow Disposition of Discharge Water --Phelos land F, 16 6 Specific Capacity -Waler Column -Project Name ... Equipment __ Location _ Well No. -

	Remarks	(e.g. clarlty)		M. John	10001
	Water			12.24	
	Dev /Purge Before	Meas.		þ	
	Turbidity NTU			+ 1000	1000
	Cond, µmhọs/cm		209		775
	Hq		17 20	200	2 2 7
Mater	Temp.		24.5%		76.70
	Flow Rate		71.50		1.5a
F	(24 hr.)		6/4/	6171	

(9.0. clarity)			Modely	Ac-	S _N	A>		\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	51. less mala.	1	1ess turb.	less tuch		13.12 M20/and	12.96' NO PO	12 80, 17 , 1	(2) (2)		
(feet)			12.24)		})		1	1		1							
Before	Mods.	4		W	7.1	661	230	200	000	380	7	459	7						
2		+ 1000		+1000	1007	00-1-1	0001 262.	1 (000)		378	126	0/1							
		687:	1	612.	176				10.5	2/7.	270	- 1							
		17.30	<	1.26	776		1.21	7.2)	2	17.7	7.22						-		
5		24.5.6	21 10	1) 1:07	27.3°	2000	40.1	26.8°	76 70	1.04	.9'92								
	7/6	1.29	27	1.19	1.59	, U	47.	1.59	\u.	66.1	0.								
	h/ ħ/		1419		1424	6641		17.74	1439		4441	4441		824/	574/				

Notes: 1 ft length of 4" × 0.087 ft³ or 0.65 gal 1 ft length of 2" = 0.022 ft ³ or 0.16 gal

7,76 X . 16 =

Manage To State Belling Manage Co.

Project Name Phulps Collins ANG	Project No. 937,800	Well Information Number LF6 Mul S	Equipment Information
lings	(Ambient) (Well Mouth)	Location S. H. G.	Bailer No.
	(Product) //// (Water)	Datum 10C	Pump No.
Pump A /Ball Rate Grand 125	Total Gal. Extracted 35	Elev. Datum Point	Interface Probe No.
Water Column Length	Well Volumes Extracted	Ground Elev. ////7	Sounder No.
Disposition of Discharge Water Cadanacized in polytrack	1200 in polytunk	Well Diameter 3"	pH Meter No.
		Well Depth 4.00 det 19.81	Conductivity Meter No.
Specific Capacity	(gprn/ft. drawdown) After Hrs.	Well Material PVC	Thermometer No.

Тігле (24 hr.)	Flow Rate (gpm)	Water Temp. In C°	Hď	Cond. µmhos/cm	Dissolved Oxygen mg/l	Turbidity	Settleable Solids (ml)	Gallons Dev./Purge Before Meas.	Water Level (feet)	Remarks (e.g. water clarity)	
1748	2.9pm									0.7.2	
1806	74 pm							735-		Cleus.	
	, ,										
										- No peremodals + los sina	0,00
										malar was broken	9
Notes: 1 ft le	Notes: 1 ft length of $4^{\circ} = 0.087 \text{ ft}^3$ or 0.65 gal	87 ft3 or 0.65	gal				Recorded	Recorded By DKTaying	-	Date 8/35/ 93 Fo	Form F-1003
-) of 2" = 0.0;	1 of 2" = 0.022 ft 3 or 0.16 gal	gal				Checked By) JY			3/15/92

Date 8/25/43 Recorded By Drowne Checked By Date	
PH Meter Number Hazco & 3083 Conductivity Meter Number '' '' Thermometer Number '' '' Casing Diameter 2" Average Discharge Rate Well Volumes	
Project Number 31800 Datum Point 60 C Elevation of Datum Point Static Water Level 16.36 Well Depth 35	gpm/ft. of draw down aftor
Project Name Aul ps Collins ANG Well No. Life may be Location Behad decomput Bewpurge Method Grany Fus Pung Equipment Water Column Disposition of Discharge Water	Specific Capacity gpm/ft. of

Remarks (e.g. clarity)	(Aura) Ara		maddy	middi		muddy		mady	slight Lear	- 111	51, 520 - c/en	[21.1]	D45						
Water Level (feet))	l			1		}	(`	,,,	6.8	16.6				
Gallons Dev /Purge Before	Meds.			4.5	11	011	13.5	100	1715	74.	0110	31,5							
Turbidity NTU		l	,	\	4/000		000/+	1 14 (80)		000/+	(,,	710							
Cond. µmhọs/cm		0.365	5.347		6.449	1	0. \$60	798.0		598.0	2000	0.110							
Hd.		2,58	7.55	3	7,57	1	1.34	7.48	1	57.1	7.47	1							
Water Temp. In C°		26.7	26.7	1, 10	4.16	2/.2		5.75	110	0.0	21.5								
Flow Rate	7	1.3gpm	1,57		5'1	ر کا		١٠٢	1,5		1, 5								
Tlma (24 hr.)		1350	1333	1.67	1551	134/	1	1345	1349		1357	1405		1406		•			

Notes: 1 ft length of 4" = 0.087 ft³ or 0.65 gal 1 ft length of 2" = 0.022 ft³ or 0.16 gal

	Remarks	(e.g. clarity)	0.0	יישממר	mada	muddy			Management of the Control of the Con				
	Water Level												
	Dev./Purge Before	Meas.		13	1 8	0		-					
	Turbidity NTU					1.0							
	Cond. µmhos/cm		Gundioning			5,/4/2							
	ЬН		to			Pra D	-						
Water	Temp. In C*		Meler		·	" po an							
	Flow Rate	1 500	make.		5'1	shut pamp	-						
Time	(24 hr.)	1251	524	7007	150	1551							

Notes: 1 ft length of 4" × 0.087 ft³ or 0.65 gal

220	Dato 8/51/43 Rocordod By DFJayet Chocked By Dato	
for after mide to d	PH Motor Number dozek Zols Dato 8/51 Conductivity Motor Number Recent Zols Checked By Thermometer Number Hecket Zols Checked By Average Discharge Rato Dato Dato Well Volumes	Note: Flow rate ofot.
	Project Name Plups Callins ANG Woll No. LEG MW ANGS Location Land Fill 6 Equipment Cing 750 Well Dopth 15.4 Well Column 3.26 Disposition of Discharge Water Water Column 3.26 Total Gallons Extracted 20.0	gpm/ft. of draw down after hours no le
	Project Name Phulps Cellins ANG Woll No. LEG MW PASS 8 Location Land Fill 6 DevPurge Mothod And ist Prung on R Equipment Cing 750 Water Column 3.28 Disposition of Discharge Water	Specific Capacity gpm/

	Remarks	(e.g. clarffy)		Tubid	Tu. 1 . 1	0'51									
	Water Level			1	\	115/15	14,44	13.90	1) (1	0					
	Gallons Dov/Purge Before	Meas.			\boldsymbol{v}				_						
	Turbidity NTU		(\			-	•						
	Cond. µmhọs/cm		K17	120	000										
-	Hd		6.43	1	66										
	Water Temp. In C•		L'he	25.>	6										
	Flow Rate		2 apin	7											
	Tima (24 hr.)		1534	1357	7.110	1575	1347	12.63	200						

Notes: 1 It length of 4 = 0.087 It 3 or 0.65 gal 1 It length of 2 = 0.022 It 3 or 0.16 gal

Date 8/31/93 Recorded By DFE.	Remarks	inducted taskid	of the
PH Motor Number The E(U # 3C/5) Conductivity Motor Number E7 Thermometer Number Ale E(C # 3C/5) Casing Diamoter 3 Average Discharge Rate	Curbidity Dev/Purge (1881)	13,94'	Water Circulating through
	-		4
Project Number 93/5cc Datum Point — Tecc Elevation of Datum Point Static Water Level 11,04 Well Depth 15.0/ Total Gallons Extracted 7	DH Cond. pmhos/cm	7.90 467 8.18 470	witer temp high due
Elevation of draw down after— Project Num Datum Point Elevation of Elevation of Total Gallons Project Num Datum Point Total Gallons	Water Temp. In C°	35.0	'
Project Name Plus Cellins ANE Project Number 93/5c Well No. LFC most of Datum Point Tec. Location Land fill b Elevation of Datum Point Dov/Purge Method Atal. Ft Prop From Re Static Water Lovel 11,04 Well Depth 15.01 Well Depth 15.01 Disposition of Discharge Water Bondt. of draw down after ho	TIme Flow Rate	3 3 4 pm 8 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	Notes: 1 ft length of 4" × 0.087 ft ³ or 0.65 gal
Project Name_Pl Well No	11 (24	1353	Notes: 1ft

1 ft longth of 2" = 0.022 ft 3 or 0.16 gal

Page 1 of 1

Equipment Information Bailer No. Pump No. Interface Probe No. Sounder No. pH Meter No. Conductivity Meter No. Thermometer No.	Remarks (e.g. water clarity)	Turbid Turbid -No pwanters taken since mater was broken Date 9/14/93 Form
Well Information Number LEGMU / O Location Ste 6 Datum Tec Elev. Datum Point Ground Elev. II' Well Diameter 3" Well Depth SS Well Material PVC	Gallons Water Dev./Purge Level Before (feet)	15 Recorded By M. Leune
	Settleable Solids (ml)	Recorded
(Water) //5 23.5 Hrs.	Turbidity	
93/860 Extracted / xtracted / xh/k	Dissolved Oxygen mg/l	
(Water Manuell) (We (Water Manuell) (We (Water Manuell) (Water	Cond. µmhos/cm	
(Ambient). (Product).	Æ	gal
	Water Temp. In C°	4x 1 1 2 0 0.65 gal
/ _ <u> </u>	Flow Rate (gpm)	1858 (1444/84:161 1934 (1444/84:181
Project Name Physical Physical Physical Property Pump M. Mall Mat Water Column Length Disposition of Discharg	Time (24 hr.)	1858 1934 Notes: 1 ft ler

Form F-1003 3v15/92

Checked By

1 of 2" = 0.022 ft 3 or 0.16 gal

I th Technology Corporation

Well Development/Purge Log

0

Form F-1003 9/1/91 No parameters taken because Equipment Information (e.g. water clarity) Conductivity Meter No. Remarks Interface Probe No. Thermometer No. Sounder No. _ pH Meter No. meta broken Baller No. Ритр No. clear -> | dear Date Water 11.40 Level (feet) Well Information 19.70 Stayne Number HNBMUS Ground Elev. 11.38 Well Diameter 3" Dev./Purge Location 514 8 Gallons Elev. Datum Point. Вегоге Meas. Datum Toc Well Material _ 25 Well Depth_ Recorded By_ Checked By Settleable Solids (m) (Well Mouth) T.S. Turbidity NTU (Water) Insposition of Discharge Water Contained 1200 in 55 gallon orum umhos/cm (gpm/ft. drawdown) After_ Project No 93/800 Total Gal. Extracted Cond. Well Volumes Extracted 11.38 Hd (Ambient) (Product) Temp. In Co Waler Propect Name Phylos Collins ANG Picture 1.11 longth of 4° = 0.087.113 or 0.65.gal Tit longth of $2^{\circ} = 0.022$ ft 3 or 0.16 gal 8.32 2.5 gpm Flow Rate (md6) Pump Q /Bail | Rate Water Column Length_ PID/FID Readings Specific Capacity. Static Lovels (24 hr) Inv 9260 8160 9710

Well Development/Purge Log

Page of	Data 8/3/67			Date Date			
for after the second	Project Number 931 Secon PH Meter Number Had coff 2015				35	VVGII VOIUMBS	gpm/ft. of draw down after hours
[2]	Moll No. RT9 MW6	Location Sife 9	DOV/PUTGO Mothod Aralist Rimp on Rig Static Water Lovel 14,61	Equipment	Water Column	Disposition of Discharge Water	Specific Capacity gpm/ft. of

Romarks	(e.y. claffly)		Insid Hydrocuson coar	\$115/1/2 (1Pan	clan	((sin / 1 don't	The arson 000						
Water Level (feet)			ļ			\	14.72	5					
Gallons Dev/Purge Before	Мваѕ.	(Ç	3 2	20	35	_						
Turbidity		(\			(,						
Cond. µmhos/cm		59/	05/5	165		1							
Hd		7,90	7.65	7,57	1,1	(3)							
Water Temp. In C°		76.8	13,3	6.61	12.0								
Flow Rate).	2gpm	7	7	۲								
ТІто (24 hr.)	1420	1184	12.	1443):bb(7777	177						

Notes: 1 ft length of 4" = 0.087 ft³ or 0.65 gal 1 ft length of 2" = 0.022 ft³ or 0.16 gal

	1
	1
	4
	1
	1
	•
	1
	4
	1
	4
	1
	1
	4
	- 1
	1
	1
	4
	7
	1
	4
	1

Monitoring Well Sampling Forms

The Earth Technology GR	OUNDW	ATER :	SAMPLING	Sample ID: PIMWIGWY
PROJECT NAME Talps Co				00-12 DATE: 9/14/93
WEATHER CONDITIONS COD			•	
PERSONNEL PHCan ,	4			
REVIEWED BY:				
EQUIPMENT USED: Bala	, Rope , ho	al pump	ssunkly, filter	
PURGING DEVICE			SAMPLING DEVIC	· ·
Type Device? Bailer			Type Device?	Sailer
How was the device decontamin	nated? ACOPOX+	DI DI Rins	يد How was the dev	ce decontaminated? Alconox+DI, DI Rinsu
How was the line decontaminate	1 3	ated	How was the line	decommanded? dedicated
Which well was previously purg	ed? Pamu	٠ د	_ Which well was p	reviously sampled? 19mwc
INITIAL WELL VOLUME			PURGING	
Well diameter (in.)			- I	120 Finished 2145
Stickup (ft.) 0.3			_ Volume purged	10
Depth to bottom of well (ft.)	12.8	5',	_ Comments on W	all Recovery Immediate
Depth to water surface (ft.)	1.0	e5		
Length of water (ft.)	11.2		Additional Comm	nents
Volume of water (ft3)	0.2	464		
(gal.)	1.8			
Amount of sediment at		_	Samples Collect	ed: Start <u>1415</u>
bottom of well (ft.) LNAPL (ft.)	DNAPL (ft.)			Finish 1430
IN-SITU TESTING Date:	<u>अतित्र</u> ीत	शाम् ३३	म्। गुरु	
IN-SITU TESTING Time:	2120	2130	5140	
Water Level	1.65		1.lde	
Well Volume Purged (gal.)		5	10	
Turbidity	51	mod	mod	
Odor	<u>SI.</u>	51.	<u> </u>	
Organic Vapor (ppm)			libecte	
pH (units)	PH and		etwity	
Conductivity (µ mhos) Water Temperature (*C)	62.5	63.4	62.8	
Water lemperature (C)		= 0.087 ft ³ or	0.65 gal. 1 ft. li	ength 2" = 0.022 π ³ or 0.16 gai

Turbidity choices:

clear, turbid, opaque

Revision Date: 2-8-91

=	The	EMT	Technology
=	COVE	MATERIAL STATE	at a

GROUNDWATER SAMPLING -

= corporation	Sample ID: PIMWZGW4					
PROJECT NAME Phelps Collins ANG RT WELL NO. MWZ LOCATION SITE!	JOB NO: 931800-12 DATE: 9/2/23					
	1,50E					
WEATHER CONDITIONS Surry winds	AMBIENT TEMP: ~UD :					
PERSONNEL PHLA 135 NORTON						
REVIEWED BY:						
EQUIPMENT USED: Plumps Railor, hose, Rope						
PURGING DEVICE	SAMPLING DEVICE					
Type Device? Pung	Type Device? Bailer					
How was the device decontaminated?	How was the device decontaminated? Alcovox+DT wash					
How was the line decontaminated? Wooder DI wash	How was the line decontaminated?					
Which well was previously purged? 27mw7	Which well was previously sampled?					
INITIAL WELL VOLUME	PURGING					
Well diameter (in.)	Time started 1505 Finished 1534					
Stickup (ft.)	Volume purged 7.5 Sc. 11843					
Depth to bottom of well (ft.) 1297	Comments on Well Recovery Immodel					
Depth to water surface (ft.) 3.72						
Length of water (ft.)	Additional Comments					
Volume of water (tt3)						
(gal.) ~ [.47						
Amount of sediment at bottom of well (ft.)	Samples Collected: Start 1540					
LNAPL (ft.) DNAPL (ft.)	Finish 1600					
IN-SITU TESTING Date: 1/5/93 9/9/93	7/9/93 9/9/93 1/9/97 1/9/93 9/9/93					
Time: 1565 1509	1516 1522 1530 1536 1600					
Water Lavel 3.72'	3.74					
	25 45 6 75 -					
	<u>51.</u> <u>51.</u> <u>51.</u> <u>51.</u>					
	none none none none					
pH (units) Q.63 7.04	7.53 7.74 7.79 7.58					
•	7.53 7.74 7.79 7.55 1.58 424 430 421 404 401					
Water Temperature (°C) (67.9 65.2	65.3 65.2 64.7 64.8 69.2					
Notes: 1 ft. length of 4" ≥ 0.087 m ³ or 0.68						
Turbidity choices: clear, turbid, op-						

The Earth Technology GR	OUNDWATER	SAMPLING Sample ID: PIMW36W4					
PROJECT NAME (PS	Collins ANG RI LOCATION SItel						
WEATHER CONDITIONS Sur	ny www.	AMBIENT TEMP: ~ 58° F					
PERSONNEL PHLay and	BFNorton						
REVIEWED BY:	<u> </u>						
EQUIPMENT USED: Plany	Bailer, Rope, L	.03%					
PURGING DEVICE		SAMPLING DEVICE .					
Type Device? Rung		Type Device? Bailer					
How was the device decontamin	lated? Seeloghock	How was the device decontaminated?					
How was the line decontaminate	d? Seelagark						
Which well was previously purg	ed? P3mwy	Which well was previously sampled?					
INITIAL WELL VOLUME		PURGING					
Well diameter (In.)		Time started 1448 Finished 1518					
Stickup (ft.)		Volume purged . <u>X15 cals</u>					
Depth to bottom of well (ft.)	13.	Comments on Well Recovery Immediate					
Depth to water surface (ft.)	, 336'						
Length of water (fl.)	9.64	Additional Comments					
Volume of water (ft3)	6.212						
(gai.)	~1.54						
Amount of sediment at bottom of well (ft.)		Samples Collected: Start 1520					
LNAPL (ft.)	DNAPL (ft.)	Finish					
IN-SITU TESTING Date:	9/16/19 9/10/93	9/10/53 9/10/53					
Time:	1448 1454	1504 1510 1518					
Water Level	3.36	3.37					
Well Volume Purged (gal.)	Intel 2	4 6 8					
Turbidity	Tore St.	<u>si</u> <u>si</u>					
Odor	rose SI	S 81 Made					
Organic Vapor (ppm)	-	7.47 7.38 7.33					
pH (units)	8.6 5 7.16 962 976	7.7 7.38 7.33					
Conductivity (µ mhos)	967 976 67.3 62.3	68,9 60.6 60.4					
Water Temperature (*C)	y en						

Not**⇔**:

1 ft. length of 4*

Turbidity choices:

1 ft. length $2^{\circ} = 0.022 \, \text{m}^3$ or 0.16 gai

Revision Date: 2-8-91

= 0.087 π^3 or 0.65 gal.

clear, turbid, opaque

= The Earth Technology GF	ROUNDWA	TER SAMF	LING S	Sample ID: Ply	mw4624			
PROJECT NAME Phelps	Collins ANG	RI JOB	NO: 93180	D-12 DATE:	9/10/93			
WELL NO. NWY	LOCATION	S+6 1						
WEATHER CONDITIONS C	ol , Rainh (Lin	AMBI	ENT TEMP: ~_	S5°F				
PERSONNEL P.H. La C	•							
REVIEWED BY:	_							
EQUIPMENT USED: Bailes	-, pope, pm	assemply -	Gw filter					
PURGING DEVICE		SAA	IPLING DEVICE	•				
Type Device? Baler		Тур	Device? Bar	e (
How was the device decontami	nated? Sulogho	UK How	was the device of	decontaminated?	Sen laghadle			
How was the line decontaminat			was the line dec	ontaminated? <u>d</u>	ledicated			
Which well was previously pur	ged? forwa	Whi	ch well was previ	ously sampled?/	romba			
INITIAL WELL VOLUME		PUF	RGING					
Weil diameter (in.)		Tim	Time started 1105 Finished 1125					
Stickup (ft.)		Volu	Volume purged S					
Depth to bottom of well (ft.)	13.21	•	Comments on Well Recovery Immediate					
Depth to water surface (ft.)	12.54							
Langth of water (ft.)	10.66	Add	itlonal Comment					
Volume of water (ft3)	0.23							
(gal.)	~ 1.7							
Amount of sediment at bottom of well (ft.)		San	iplas Callected:	Stan 12:	35			
LNAPL (ft.)	DNAPL (H.)			Finish 12	145			
IN-SITU TESTING Date:	9/10/97	10 23 9 10 53	9 10 93	1/10/93				
Time:	,	2 115	1120	1152	****			
Water Level	2.54			2.55				
Well Volume Purged (gai.)		5	<u> 15</u>	8				
Turbidity		od nod	mod	mod _				
Odor	53, 3	<u>. 31.</u>	<u>ə</u> .	_51				
Organic Vapor (ppm)	7,27 73	7.19	7.33	7.13				
pH (units) Conductivity (µ mhos)	1	4 321	- PI	303				
Water Temperature (°C)	- 1	3.0 63.2	623	<u>(e).</u> (c				
Notes: 1 ft, length (37 n ³ or 0.65 gal.	1 ft. length	2" * 0.022 m ³ or 0.10	8 gal			

Notes:

1 ft. length of 4° Turbidity choices:

clear, turbid, opaque

Revision Date: 2-8-91

The Earth Technology GR	OUNDWATER	SAMPLING Sample ID: PIMW (obuse)
PROJECT NAME PROJECT	C +	JOB NO: 931800-12 DATE: 9/15/93
WEATHER CONDITIONS RO	ing, cool	AMBIENT TEMP: - 50°
PERSONNEL THE A	of DEJONE	
EQUIPMENT USED: Bailer	12000, pump assent	aly stilter
PURGING DEVICE		SAMPLING DEVICE
Type Device? Baller		Type Device? Baile (
How was the device decontamin	sted? Salosbeak	How was the device decontaminated?
How was the line decontaminate	107 dedicated	How was the line decontaminated? character
Which well was previously purg	ed? Simwl	Which well was previously sampled? PIMWI
INITIAL WELL VOLUME		PURGING
Well dlameter (ln.) 2"		Time started 0940 Finished 1000
Stickup (ft.)		Volume purged , , 8
Depth to bottom of well (ft.)	14.95	Comments on Well Recovery Immediate
Depth to water surface (ft.)	4.3/	
Length of water (ft.)	10.64	Additional Comments
Volume of water (ft3)	0.234	
(gal.)	1.7 gals	
Amount of sediment at bottom of well (ft.)		Samples Collected: Start 1952
LNAPL (ft.)	DNAPL (ft.)	Finish 2010
IN-SITU TESTING Date:	9/15/53 9/15/93	3/15/23
រាក៖	0940 0950	1000
Water Level	4.31	4.34
Well Volume Purged (gal.)	4	8
Turbidity	st. med	usey
Odor	Sl. mod	3trong
Organic Vapor (ppm)		
pH (unit s)	instament real	
Conductivity (µ mho*)		metro ity
Water Temperature (°C)	62.4 62.1	62.5
Notes: 1 ft. length o	of 4" = 0.087 ft ³ or 0	1.65 gai. 1 ft. length 2" = 0.022 ft ³ or 0.16 gal

Turbidity choices:

Revision Date: 2-8-91

clear, turbid, opaque

₹ The Earth Technology GROUNDWA	TER SAMPLING Sample ID: SIMILED
PROJECT NAME Photos Collins ANG WELL NO. MW 11 LOCATION _ WEATHER CONDITIONS COOL PERSONNEL PHOTOS FT REVIEWED BY: NFJ	Site 1 Old POL
EQUIPMENT USED: Bailer, Rope than	2 pimp assembly, Filter
PURGING DEVICE Type Device? Baclor How was the device decontaminated? Alconox+DT How was the line decontaminated? Alconox+DT Which well was previously purged? PIMW13	SAMPLING DEVICE Type Device? Pailer How was the device decontaminated? Dedicated From Furge How was the line decontaminated? dedicated
INITIAL WELL VOLUME Well diameter (in.)	
Amount of sediment at bottom of well (ft.) LNAPL (ft.) DNAPL (ft.)	Samples Collected: Start 1452
1	1493 9/14/43
Well Volume Purged (gai.) Turbidity Odor Organic Vapor (ppm)	1.5 9.5
Conductivity (µ mhoe) Water Temperature (°C) Lnable + C	2.85 APH abricusturity offline or calibrate for Conductivity 17.1 Gib 11. length 2° = 0.022 n³ or 0.18 gai

Turbidity choices:

clear, turbid, opaque

Revision Date: 2-8-91

_	7720	F MITT	Technology
_	\sim	~~=	₩7

GROUNDWATER SAMPLING

Sample ID	JE IMIZ GWY
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	alizla
PROJECT NAME	JOB NO: 931500-12 DATE: 9/13/93
WELL NO (VIA)	ld POL
WEATHER CONDITIONS Cool Je Cun	AMBIENT TEMP: - 52F
PERSONNEL PHLAN	·
REVIEWED BY:	
EQUIPMENT USED: Bailer, Pape, Filter, head	220 000
EQUIPMENT USED: Baller , POPU 17:11-	The state of the s
PURGING DEVICE	SAMPLING DEVICE
Type Device? Beiler	Type Device? Bailer
How was the device decontaminated? Alconox+DI ,DIRM &	How was the device decontaminated? Alconox+DI, DIR nos
How was the line decontaminated?	How was the line decontaminated? dedicated
Which well was previously purged?	Which well was previously sampled?
	PURGING
INITIAL WELL VOLUME	Time started: 1849 Finished 1908
Well diameter (in.)	Volume purged 10
Stickup (ft.) ~2'	Comments on Well Recovery Inmediate
Depth to bottom of well (ft.)	Comments on warrend
Depth to water surface (ft.)	Additional Comments
Length of water (ft.)	
Volume of water (ft3)	
(gai.)	Samples Collected' Start 1436
Amount of sediment at bottom of well (ft.)	Samples Controller Start
LNAPL (ft.) DNAPL (ft.)	- Finish <u>140</u>
Date: 9//3/53 9//3/53 9	/13/63
IN-SITUTESTING	708
Water Level 3.27 3	.29
Well Volume Purged (gal.)	10
Turbidity	ed
Odor <u>Sl. 4.</u> <u>S</u>	<u> </u>
Organic Vapor (ppm)	
pH (units) twasle to calibra	te Phad cond.
Conductivity (µ mhos) Col. 2 Col. 8	61.4
Water Temperature (°C)	2
Notes: 1 ft. length of 4° = 0.087 ft ³ or 0.65	-
Turbidity choices: clear, turbid, opa	44-

■ The Earth Technology GROUNDWATER SA	Sample ID:1_IMI 3000			
PROJECT NAME Pholps Collins ANGRI WELL NO. MW13 LOCATION SIte!	JOB NO: 931800-12 DATE: 9/14/93			
WEATHER CONDITIONS COOL Rains PERSONNEL PHLAN & DF JAGAR	AMBIENT TEMP: ~ (00°			
REVIEWED BY:				
EQUIPMENT USED: Bailón hand pump assembly	Gitter			
PURGING DEVICE	SAMPLING DEVICE			
Type Device? Bailer	Type Device? Bailer			
How was the device decontaminated? Alcanox+DI, Meins				
How was the line decontaminated?	How was the line decontaminated? deducated			
Which well was previously purged? 21MWII	Which well was previously sampled?			
INITIAL WELL VOLUME	PURGING			
Well diameter (in.)	Time started 14/0 Finished 1422			
Stickup (t.) ~ 2'	Volume purged			
Depth to bottom of well (ft.)	Comments on Well Recovery Immediate			
Depth to water surface (ft.)				
Langth of water (ft.)	Additional Comments			
Volume of water (ft3)				
(gal.)]. (o				
Amount of sediment at	Samples Collected: Start 1545			
bottom of well (ft.) LNAPL (ft.) DNAPL (ft.)	Finish			
	114/23			
Water Level				
Well Volume Purged (gal.)	<u> </u>			
Turbidity 51 51	an od			
Odor non Sl.	<u> </u>			
Organic Vapor (ppm)				

Notes: 1 ft. length of 4°
Turbidity choices:

= 0.087 m³ or 0.65 gal.

1 ft. length 2° = 0.022 ft³ for 0.16 gai Revision Date: 2-8-91

TETC 154

pH (units)

Conductivity (µ mnos)

Water Temperature (°C)

The Earth Technology GROUNDWATER S	Sample ID: Plm 146w4				
PROJECT NAME Pholps Callins ANGRI WELL NO. MW14 LOCATION SITE	JOB NO: 931800-12 DATE: 9/15/93 Old POL Storage area				
WEATHER CONDITIONS Cod , Roung	AMBIENT TEMP: 50°F				
PERSONNEL PHLan and DF Jame	·				
REVIEWED BY:					
EQUIPMENT USED: Purp, Bailer, hose					
PURGING DEVICE	SAMPLING DEVICE				
Type Device? Pung	Type Device? Bailer				
How was the device decontaminated? Alcohow DT, DT Cons	How was the device decontaminated? Alcou ex+DI,DIR NS				
How was the line decontaminated? dedicated	How was the line decontaminated?				
Which well was previously purged? Pimwl	Which well was previously sampled? PIMI3				
INITIAL WELL VOLUME	PURGING				
Weil diameter (in.)	Time started. 0930 Finished 1050				
Stickup (ft.) ~ 2 '	Volume purged 22				
Depth to bottom of well (ft.)	Comments on Well Recovery Immediate				
Depth to water surface (ft.)	·				
Length of water (ft.)	Additional Comments				
Volume of water (ft3)					
(gal.) ~ 4.12	Samples Collected: Start USG				
Amount of sediment at bottom of well (ft.)	Samples Collector				
LNAPL (ft.) DNAPL (ft.)					
IN-SITU TESTING Date: 9/15/93	9/15/3 9/15/93				
Time: <u>0530</u> 0555	<u> 1025 1056</u>				
	15 22				
Well Volume Purged (gal.) Turbidity None Nove	none have				

Turbidity choices:

1 ft. length of 4*

= 0.087 ft³ or 0.65 gal. clear, turbid, opaque

none

60.8

NONE

6/8

1 ft. length 2° = 0.022 ft³ or 0.16 gal Revision Date: 2-8-91

TETC154

Notes:

Odor

pH (units)

Organic Vapor (ppm)

Conductivity (u mhos)

Water Temperature (°C)

_		CART	Thennoway	
==	_		-	

GROUNDWATER SAMPLING

Poznul Guy
Sample ID: 1026Mot

PROJECT NAME PROJECT NAME PROJECT NAME PROJECT NAME PROJECT NAME PROJECT NAME PROJECT NAME PROJECT NAME PROJECT NAME PRODUCTIONS LIGHT NAME AND CONTROL PROSPECTIONS LIGHT NAME AND CONTROL PROSPECTIONS LIGHT NAME AND CONTROL PROJECT NAME PROSPECTIONS CONTROL PROJECT NAME PROSPECTIONS CONTROL PROJECT NAME OF CONTROL PR					ample ib.	10/10	TE I
WEATHER CONDITIONS WARM-hand hate Ambient TEMP: ~ 85 PERSONNEL PLA MC. Staker REVIEWED BY: DEJ. EQUIPMENT USED: Bailer Regre grup and the first process of the device of the first process of the fi	PROJECT NAME Phelps Collins	ANGRE	JOB NO):	0	ATE: Aug 1	6,1943
PERSONNEL PILL I ME. STAKET REVIEWED BY: EQUIPMENT USED: 3 - 16 C ROCK RAPE REVIEWED BY: PURGING DEVICE Type Oevice? Baller How was the device decontaminated? PCT 1 thock How was the device decontaminated? PCT 1 thock How was the line decontaminated? PCT 1 thock How was the line decontaminated? PCT 1 thock How was the line decontaminated? PCT 1 thock How was the line decontaminated? PCT 1 thock How was the line decontaminated? PCT 1 thock How was the line decontaminated? PCT 1 thock How was the line decontaminated? PCT 1 thock How was the line decontaminated? PCT 1 thock How was the device decontaminated? PCT 1 thock How was the line decontaminated? PCT 1 thock How was the device decontaminated? PCT 1 thock Additional Comments I T T S T S T S T S T S T S T S T S T S				motor pool			
PERSONNEL PILL I ME. STAKET REVIEWED BY: EQUIPMENT USED: 3 - 16 C ROCK RAPE REVIEWED BY: PURGING DEVICE Type Oevice? Baller How was the device decontaminated? PCT 1 thock How was the device decontaminated? PCT 1 thock How was the line decontaminated? PCT 1 thock How was the line decontaminated? PCT 1 thock How was the line decontaminated? PCT 1 thock How was the line decontaminated? PCT 1 thock How was the line decontaminated? PCT 1 thock How was the line decontaminated? PCT 1 thock How was the line decontaminated? PCT 1 thock How was the line decontaminated? PCT 1 thock How was the device decontaminated? PCT 1 thock How was the line decontaminated? PCT 1 thock How was the device decontaminated? PCT 1 thock Additional Comments I T T S T S T S T S T S T S T S T S T S	WEATHER CONDITIONS WARM - hum	AMBIEN	IT TEMP: ~ <u>8</u>	5°			
### REVIEWED BY:	PERSONNEL PHLO " ME. Stoker						
SAMPLING DEVICE Type Device? Baller Type Device? T	O_{\perp}						
SAMPLING DEVICE Type Device? Samples Collected: Samples Collecte	EQUIPMENT USED: 30165, ROPE	gump asser	mbly 35	Filter			
How was the device decontaminated?							
How was the device decontaminated?	Type Device? Bailer		Type C	Device? Ba,	ec		
How was the line decontaminated? Mcd. Lottch How was the line decontaminated? Mcd. Lottch Mich well was previously sampled? Mcd. Lottch Mcd. Lottch Mich well was previously sampled? Mcd. Lottch Mcd. Lottch Mich well was previously sampled? Mcd. Lottch Mcd. Lottch Mich well was previously sampled? Mcd. Lottch Mcd. Lottc		clappor	How w	vae the device d	econtaminated	17 per lock	sock_
Purging Purging Time started 1455 Finished 1514	How was the line decontaminated? de	dicated	Howw	ves the line deco	ntaminated?	dedicatec	1
Well clameter (in.)	Which well was previously purged?	one	Which	well was previo	usiy sampledî	none	
Note: 1 ft. length of 4" Note: Note: 1 ft. length of 4" Note: 1 ft. length of 4" Note: Note: 1 ft. length of 4" Note: Note: 1 ft. length of 4" Note: Note: 1 ft. length of 4" Note: Note: 1 ft. length of 4" Note: Note: 1 ft. length of 4" Note: Note: 1 ft. length of 4" Note: Note: 1 ft. length of 4" Note: 1 ft. length of 4" Note: Note: 1 ft. length of 4" Note: 1 ft. length of 4" Note: Note: 1 ft. length of 4" Note: Note: 1 ft. length of 4" Note: Note: 1 ft. length of 4" Note: Note: 1 ft. length of 4" Note: Note: 1 ft. length of 4" Note:			PURG	ING			
Note: 1 ft. length of 4" Note: Note: 1 ft. length of 4" Note: Note: 1 ft. length of 4" Note: Note: 1 ft. length of 4" Note: 1 ft. length of 4" Note: Note: 1 ft. length of 4" Note: Note: 1 ft. length of 4" Note: Note: 1 ft. length of 4" Note: 1 ft. length of 4" Note: Note: 1 ft. length of 4" Note: 1 ft. length of 4" Note: 1 ft. length of 4" Note: 1 ft. length of 4" Note: 1 ft. length of 4" Note: 1 ft. length of 4" Note: 1 ft. length of 4" Note: 1 ft. length of 4" Note: 1 ft. length of 4" Note: 1 ft. length of 4" Note: 1 ft. length of 4" Note: 1 ft. length of 4" Note: 1 ft. length of 4" Note: 1 ft. length of 4" Note: Note: 1 ft. length of 4" Note: Note: 1 ft. length of 4" Note: Note: 1 ft. length of 4" Note: Note: 1 ft. length of 4" Note: Note: 1 ft. length of 4" Note: Note: 1 ft. length of 4" Note: Note: 1 ft. length of 4" Note: Note: 1 ft. length of 4" Note: Note: 1 ft. length of 4" Note: Note	Well diameter (in.)		Tim●●	Harred 144	55 F	inished 15	14
Depth to water surface (ft.)	Stickup (ft.)		Volum	Volume purged 7.5 se)			
Langth of water (ft.) 13.52 Additional Comments	Depth to bottom of well (ft.)	,	Comments on Well Recovery Tamadati				
Volume of water (ft3) (gal.) ~ 2. 2	Depth to water surface (ft.)	18					
Amount of sediment at bottom of well (ft.) DNAPL (ft.) DNAPL (ft.) Flinish 1537	Langth of water (ft.)	.52'	Additi	onsi Comments			
Amount of sediment at bottom of weil (RL) LNAPL (RL) DNAPL (RL)	, ,						
Determination of well (Rt.) DNAPL (Rt.) DNAPL (Rt.) DNAPL (Rt.) DNAPL (Rt.) DNAPL (Rt.) DNAPL (Rt.) DNAPL (Rt.) DNAPL (Rt.) DNAPL (Rt.) S.16-53 S.16-13 S.16-53 S.16-13 S.16-53 S.16-13 S.16-53 S.16-13 S.16-53 S.16-13 S.16-53 S.16-13 S.16-53 S.16-13 S.16-53 S.16-13 S.16-53 S.16-53 S.16-13 S.16-53 S.16-53 S.16-13 S.16-53	(gal.)	2.7					
N-SITU TESTING Date: 9-10-ft			Samp	les Collected:	-		
Time: 1455 1502 1505 1514 1537 Water Level	LNAPL (TL) DNAPL (TL)			Finish _	1537	
Water Level 8.48' 3.48' Well Volume Purged (gal.) -0- 2.5col 5 7.5 Turbidity 51.+0one 51. 51. 51. Odor none none none none none Organic Vapor (ppm) - - - - pH (units) 7.79 8.16 7.95 7.97 7.96 Conductivity (µ mnos) 346 257 286 279 258 Water Temperature (°C) 70.6 65.0 165.1 67.5 67.6 Notes: 1 ft. length of 4" = 0.087 n² or 0.65 gal. 1 ft. length 2" = 0.022 n³ or 0.16 gal	IN-SITU TESTING Date: 9-10-63	<u> 78-01-87</u>	5-16-53	8.16-13	8-1043		
Well Volume Purged (gal.) -O- Z.5 col S 7.5 Turbidity S1.→None S1. S1. S1. S1. Odor None		1502	1505	1514	1537	 	
Turbidity S1.+None S1. S1. S1. S1. S1. Odor None None None None Non Non Non Non None None	Water Level 8,48	***********					
Odor none none <t< td=""><td>Well Volume Purged (gal.)</td><td>•</td><td></td><td></td><td></td><td></td><td></td></t<>	Well Volume Purged (gal.)	•					
Organic Vapor (ppm) —	Turbidity Sl.+none	-		_51	51		
pH (units) 7.79 8.16 7.95 7.97 7.96 — Conductivity (w mnos) 346 257 286 279 258 — Water Temperature (°C) 70.6 45.0 65.1 67.5 67.6 — Nates: 1 ft. length of 4° = 0.087 ft ³ or 0.65 gal. 1 ft. length 2° = 0.022 ft ³ or 0.16 gal					<u> </u>		
Conductivity (µ mhos) 346 257 286 279 258 Water Temperature (°C) 70.6 65.0 65.1 67.5 67.6 Notes: 1 ft. length of 4" = 0.087 ft ³ or 0.65 gal. 1 ft. length 2" = 0.022 ft ³ or 0.16 gal					70:		
Water Temperature (°C) 70.6 (S.O (S.I (67.5 67.6)) Notes: 1 ft. length of 4" = 0.087 ft ³ or 0.65 gal. 1 ft. length 2" = 0.022 ft ³ or 0.16 gal	' ' '						
Notes: 1 ft. length of 4" = 0.087 ft ⁻³ or 0.65 gal. 1 ft. length 2" = 0.022 ft ⁻³ or 0.16 gal	· · · · · · · · · · · · · · · · · · ·						
•	Water Temperature (°C) 70.6	<u> </u>	105.1				
Turbidity choices: clear, turbid, opaque Revision Date: 2-8-91	Notes: 1 ft. length of 4"	• 0.087 n ³ or 0.65	5 gal	T ft. length	2° = 0.022 m ³ (or 0.16 gal	
	Turbidity cnoicœ:	clear, turbid, op-	endna.	Rev	daion Date:	2-8-91	

E The Earth Technology GROUND	WATER SA	Sample ID: PsmwzGw4
PROJECT NAME Phelps Col		JOB NO: 931800 DATE: 8-16-93
WELL NO. MWZ LOCATIO	ON SITE	3 2 MWZ
WEATHER CONDITIONS COUNTY	1	AMBIENT TEMP: ~ 70°F
	oker 9	Mike Hizzard
DII I		
REVIEWED BY: THE		T II.
EQUIPMENT USED: PUMP	nose, bai	les, Jitter
PURGING DEVICE		SAMPLING DEVICE
Type Device? DV MP		Type Device? David
How was the device decontaminated?	e log book	How was the device decontaminated? 528 163 600 F
	edicated	How was the line decontaminated? <u>dedicated</u>
1	mwl	Which well was previously sampled? PSmw
Which well was previously purget.		
INITIAL WELL VOLUME		PURGING Time granted 0845 Finlahed 07/2
Weil diameter (in.)		Time started 0845 Finished 0712
Stickup (ft.) 2.3'	270	Volume purged
Depth to bottom of well (ft.)	8,40	Comments on Well Recovery
Depth to water surface (ft.)	3.90	5 (() 5 2
Length of water (ft.)	9.30	Additional Comments Collected Dup 7
Volume of water (ff3)	1.488 gal	msoso also - well hals
(gsi.)	9 952	is red w/ iron.
Amount of sediment at		Samples Collected: Start 07/5
bottom of well (ft.) I NARL (ft.) DNAPL (ft.)		Finish
631-33		18-16-53 08-16-53 08-16-53 08-16-53
IN-SITU TESTING Date 10		28:59 09:07 8:12 09:15
Water Level 9.30		8.95
Well Volume Purged (gai.)	2	4 6 7
Turbidity 5		None near None None
Odor -O~	nove	ware work were -
Organic Vapor (ppm)	-0-	0- 0- 0-
PH (unite) 7.68		<u>42</u> <u>7.29</u> <u>7.36</u> <u>7.41</u>
Conductivity (µ mno=)		246 238 21/
Water Temperature (°C) 63.7	60,0	59.2 59.3 59.1 59.3
Notes: 1 ft. length of 4"	• 0.087 ft ³ or 0.65 (gaL 1 ft. length 2" = 0.022 ft ³ or 0.16 gal
Trendly choice:	ciear, turbid, open	

The Earth Technology Corperation	GROUND	WATER SA	AMPLING	Sample ID:	PZMW3	16 U4
PROJECT NAME	Phelps Co	llins RI	ЈОВ НО: 9 7	31800 0	ATE: <u>8</u> -	16-93
WELL NO. MU) 3 LOCATIO	DN _ 51+	e 7			
WEATHER CONDITIONS	. <u>Cloud</u>	7	AMBIENT TEMP:	2720	F	
PERSONNEL	Mark 5	token 4	Mike E	172016)	
REVIEWED BYPAL	-4/					
EQUIPMENT USED:	pump,	hora,	bailer,	Filter		
PURGING DEVICE	^		SAMPLING DEVI	CE		
Type Device?	pump		Type Device?	baile	\	
How was the device dec	contaminated? 50	e log book	How was the dev	ice decontaminated		s babit
How was the line decon		edicated	How was the line	decontaminated?	Oe) 1	calan
Which well was previou	siy purged? 2	-WMS	Which well was p	reviously sampled?	2m	WZ_
INITIAL WELL VOLUME	1	,	PURGING			
Well dizmeter (in.)	2	/	Time started _	020 F	inlahed	60
Stickup (ft.)	2.2		Volume purged			
Depth to bottom of well	(11.)	<u> 95</u>	Comments on W	II Recovery		
Depth to water surface ((11.)	7,45				
Langth of water (ft.)		,50	Additional Comm	ents		
Volume of water (ft3)		2,16				
(gai.)	<u></u>	8,64			11:0	
Amount of sediment at bottom of well (ft.)			Sampl⇔ Collect	ed: Start _	11:0	<u> </u>
LNAPL (ft.)	DNAPL (ft.)			Finish _	// 01	
IN-SITU TESTING	Date: 09-16-17		110/93 8/K/		8/11/20	08-16-97
	Time: 5.45	10 36 10	1650	10:55	11,00	8719
Water Level Well Volume Purged (ga	<i>*</i>	2	4 6	3	10	<u> </u>
Turbidity	41					
Odor	-0-	<u>-0-</u>	-0-	0-	-0-	-0-
Organic Vapor (ppm)	-0-	70-	~ 0	O -	10-	711
pH (unite)	7:57	10	7.46 7.3		150	1.55
Conductivity (µ mno e)	61 7		34 (.38 32,3 60al		59.8	59.3
Water Temperature (*C)		61.7				
ł	length of 4* laity choices:	= 0.087 ft ³ or 0.65 (ngth 2" = 0.022 ft ³ c		
TETC154						

Year

_	-	d	Technology	
_		CMA	1000007	
		-		

GROUNDWATER SAMPLING

Corporation					S	ample ID:	45Wnd	6 W9
PROJECT NAME T	helps	Collins	RI	ОИ ВОС	93180	0 0	ATE: 8-12	2.43
WELL NO. MW4 LOCATION Motor Pool Site 7								
WEATHER CONDITIO		rm, Sm	41h	AMBIEN	т темр: <u>~</u> _	68°F		
PERSONNEL PA								
	0							
REVIEWED BY:								
EQUIPMENT USED:	Bailer	,8088	hand pur	9 95500	18 filter			
PURGING DEVICE				SAMPL	ING DEVICE			ļ
Type Device? Ba	lec			Туре О	evicer Bai	let		
How was the device	decontamin	sted? See	logbook	How w	es the device d	econtaminated	300 log	book
How was the ilns dec	ontaminate	no ded	licatod	Howw	se the line deco	ntaminated?	ded.ca	1€
Which well was previ	ously purg	ed? PO6	mw1	Which	well was previo	usly sampled?	PoGMU))
INITIAL WELL VOLUM	ΛE			PURGI	NG			
Weil diameter (in.)	S	<i>D</i> .		Times	tarted O?	3 <i>0</i> FI	nlahed 95	1
Stickup (ft.)	~ 2'				purged			
		23	2.21 8700	1		•	nodicte	
Depth to bottom of w	eπ.)	en chi	PHL 8-12-43	· Camin	WILE OIL WEIL NO			
Depth to water surface	ce (ft.)	13 42 4	442246	-		_		
Langth of water (ft.)		. 3.16	8-12-	73 Addition	onal Comments			
Volume of water (ft3)		<u> </u>	5 2,2 YHC	-				
(gai.)			1350, 8-12	رلا-			H-8-12-93	
Amount of sediment bottom of well (ft.)	at			Sampl	⇔ Collected:		928 10	728
LNAPL (TL)	_	DNAPL (ft.)				Finish	1044	
	Date:	5-12-93	8.12-93	8-12-43	8-12-13	8-12-93	8-12-93	8-12-53
IN-SITU TESTING	Time:	530	934	957	941	945	948	1044
Water Level		8.78		_		_	8.79	8.71
Well Volume Purged	(cal.)	-0-	2 9	49	63	89	100	
Turbidity	(=)	31	51	51	3/	5	5/	_5/_
Odor		Non	None	Nos	None	Nove	None	non
Organic Vapor (ppm)	- 0-	-0-	-0-	-0-	<u> </u>	- 0-	-0'
pH (unite)		8.24	8.06	8.12	8,66	8,10	8.07	8.10
Conductivity (u mho	•)	934	942	938	898	394	342	328
Water Temperature (·c)	60,3	58.4	57.8	56.9	56.7	56.9	57.2
Notes: 1	ft. length o	if 4°	■ 0.087 R ³ or 0.	.65 gal.	1 ft. length	2" = 0.022 m ³ o	r 0.16 gai	
Turbidity cnoices:		clear, turbid, opaque		Revision Date: 2-8-91				

GROUNDWATER SA	Sample ID: Panwy6w4 Resage
PROJECT NAME Phelps Colling RJ WELL NO. MW4 LOCATION Site	JOB NO: 93/800 DATE: 8-16-93
WEATHER CONDITIONS C 16 Octor	AMBIENT TEMP: 27502
PERSONNEL MOSKSTOKES & MI	1
REVIEWED BY: PI-1 Lay	
EQUIPMENT USED: Deril Stellic pump, teflor	hailer, and metals. Alter o
PURGING DEVICE	SAMPLING DEVICE .
Type Device? AM P	Type Device?
How was the device decontaminated? See log book	How was the device decontaminated? 690 109
How was the line decontaminated? dodicated	How was the line decontaminated? adod i'cq tod
Which well was previously purged? 3 M W 3	Which well was previously sampled? 2MW3
INITIAL WELL VOLUME	PURGING
Well diameter (in.)	Time started 1415 Finished 1455
Stickup (ft.)	Volume purged 8,6 8
Depth to bottom of well (ft.)	Comments on Well Recovery RCOVEY
Depth to water surface (ft.)	Very Good Waterat 8.9 after was p
Length of water (ft.) <u>13.48</u>	Additional Comments
Volume of water (ft3)	
(gal.) 2.15 gal	
Amount of sediment at bottom of well (ft.)	Samples Collected: Start 1500
LNAPL (ft.) DNAPL (ft.)	Finish 7510
IN-SITU TESTING Date: 8-16 Time: 1415 [430 14	30 1440 14 6 0
Water Level	
	4 6 8
Turbidity Odar -00-	<u>o</u> _
-0.5 - 0.3	06-
Organic Vapor (ppm) PH (units) 8.41 8.34	811 802 8.11

Not⊶:

Conductivity (µ mho=)

Water Temperature (°C)

271

60

278

60.1

= 0.087 π^3 or 0.65 gal.

clear, turbid, opaque

200

65.5

t ft. length of 4°

Turbidity choices:

368

60.1

1 ft. length 2" = 0.022 ft³ or 0.16 gai

Revision Date: 2-8-91 -

269

60

The Caron Technolog Corporation
PROJECT NAME

0 5 0 1			0	1110
GHOU	שטאנ	ALER	SAMPL	JNG

E CONTROL DECEMBER OF GI	מאוטטי	WAIER	SF	AIVIP L	-114G L	Sample ID:	Pzmws	50W4	
PROJECT NAME Phelps							ATE: 8-12	-93	
WELL NO. MWS									
WEATHER CONDITIONS LA	rm , 541	nny	_	AMBIEN	IT TEMP: 6	8°t-			
PERSONNEL PH Lay									l
REVIEWED BY:	<u> </u>								
EQUIPMENT USED: Pump	hose,	Briler,	pu	mp a	samble	w/Filte	۶۲.		
PURGING DEVICE				SAMPI	TING DEVICE	•			
Type Device? Pumple	50 pung	.)	_	Туре О	evice? Bay	lec			
How was the device decontamin	ated? Salo	logbook	_	How w	as the device	decontaminated	2 Seelog	book	
How was the ilne decontaminate	de de	eli cated	_	How w	ze the line dec	ontaminated?	1ed, ca	-ted	
Which well was previously purg	ed? Pole	MWI	-	Which	well was previ	ously sampled?	Polemu	N I	
INITIAL WELL VOLUME				PURGI		_	. 11	_	
Weil diameter (In.)			-				nished []		
Stickup (ft.)		/ -	-						
Depth to bottom of well (ft.)		BTOC	-	Comm	ents on Well R	ecovery <u>I</u>	nned ate		
Depth to water surface (fL)		03 BTO C	_						
Length of water (ft.)	48	.37	-	Additio	onal Comment	•			
Volume of water (#13)	1.0	4	_						
(gai.)	<u>~7</u> ;	75	_						
Amount of seclment at bottom of well (fl.)				Sampi	⇔ Callected:	Start _	1120		
LNAPL (fL)	DNAPL (ft.)		_			Finish _	1159		
IN-SITU TESTING Date:	8-1243	8-12-93	8-	-12-53	8-12-93	8-12-53	8-12-93	8-12-17	
Time:	05 00	0939	10	82	1628	1050	1112	1159	
Water Level	8.631		_					8.67	
Well Volume Purged (gai.)	-0-	5		0	15	10	55		
Turbidity	none	hone		~a~	none	none	none	none	
Odor	none	Non	•	SKe	-o.	none	none	5/1912 Sur	gr
Organic Vapor (ppm)	-0.	6 - 6	-	12		C 18	=0 == = 11	5.13	
pH (unite)	8.40 1164	8.26 1/32		134	8.24 1132	<u>8.18</u>	8.11	1148	
Conductivity (µ mhos) Water Temperature (*C)	61.2	57.2		8.1	60.8	61.0	40.2	61.2	
		= 0.087 m ³ or 0				2" = 0.022 m ³ o			1
Notes: 1 ft. length o Turbidity cho		clear, turbid,				vision Date:			

E The Care Technology GROUND	WATER SAM	PLING [Sample ID	: PZMW50	iw4 los	
PROJECT NAME Pholos Collin	s Rl ,	B NO: 931		6/2	0/93	you
WELL NO. WWS LOCATIO	0.1. 2			onit.	/ //	
WEATHER CONDITIONS Cloudy be	esy humd an	BIENT TEMP: _	70	°F		
PERSONNEL JSmith	MSKen					
REVIEWED BY: 1 (9.						
EQUIPMENT USED: Peristalic Pur	np + disposable	polyethlyl	ene hose;	teflorbail	es with a	isposoble
PURGING DEVICE	s	AMPLING DEVICE	rmetals-	-> peristalic	pump	
Type Device? Peristalic Pump	ту	pe Device?	teflon mi	ler for vo	(S, SVOCS, TI	H
How was the device decontaminated?	lagbook H	ow was the device	decontaminate	or potable also	nox -7 out	bk-7
	0	ow was the line de		disposable ne	wnylon	_
Which well was previously purged?	tebunb w	hich well was pre	_	1 H. A. L.		
INITIAL WELL VOLUME	Pq	JRGING				
Well diameter (In.)	ή π	me started 13	_	Finished	420	
Stickup (ft.)	_	olume purged _	25	gallon	15	
Depth to bottom of well (ft.) BICC 25	c	mments on Well	Recavery			
Depth to water surface (ft.) BTX	8.25				<u> </u>	
Length of water (ft.)	8.75' A	iditional Commen	te			
Totaline St Water (its)		Sample	for vac	Sonlyde	re to	
(gal.)	7.8	propoch	ems m	issed ho	lacky	ne
Amount of sediment at bottom of well (ft.)	NM S	imples Collected:	Start .	1420		
LNAPL (RL) N M DNAPL (RL)	NM	430 the	Finien .	14 30		
IN-SITU TESTING Date: 85493	1350 1350	1/08	1 [1125	-	
Water Level of BTX 8.24	8.27 8.28		8:30	1420 8.30		
	3 5 10	15	70	25		
Turbidity Clear	d d	cl	cl	cl		
odar nove	NME NOR	Nova	None	Nove		-
Organic Vapor (ppm)	NN an	N/Na	· Nm	$\overline{\nu}$		
pH (units) # 4560		1000	10.01.0	× /		
Water Temperature (1/2) of 103.9	969 59.2 59.5		1097 1613	<u>11.16.</u> 54.5		
us e/4/73		-	3417			
Notes: 1 ft. length of 4" Turbidity choices:	= 0.087 R ³ or 0.65 gal clear, turbid, opeque		n z* = 0.022 n ³ : evision Date:	-		
TETC154	. 11	1 67 '				l
BTOC - Below Top of Oders	0 . G-43	Arca.	au tich	mellumay	be broke	m
BTOC - Bulow 10p 0000	un (sa.) (asine	y ∠on `	auci i"	FIG	URE 3-2	

23.4 galler minim

The Earth Technology GR	OUND	WATER	SAMF	LING	Sample ID:	Pemme	:6w4
PROJECT NAME Phelps	Collin s	ANG RE	E JOBI	10: 9318	50-12	DATE: 9/9/	93
WELL NO. mw Le		on Site	_	otor po		, ,	
WEATHER CONDITIONS Co.	ol cair	١٢.	AMBI	ENT TEMP: -	60		
PERSONNEL PH LAY E	•	\sim					
REVIEWED BY:							
EQUIPMENT USED: Pump	hose,	Bailer	Rope				
PURGING DEVICE			SAN	PLING DEVICE			
Type Device? Peristatric	ouns		Тур	Device? Bo	uler		
How was the device decontamin	iated? See	loghoon	How	was the device of	lecontaminated	17 <u>See lo</u>	thook
How was the line decontaminate	d? Sue	locharde	How	was the line dac	ontaminated?	ded.c	ated
Which well was previously purg	D1 -	เพร	Whi	ch well was previ	ously sampled	Plomu	9
INITIAL WELL VOLUME			PUR	діна			
Well dlameter (In.) 2"	•		TIme	180 benate	<u> </u>	Inlahed O9	12
Stickup (ft.)			Volu	ma purged	15 gall:	5,	
Depth to bottom of well (ft.)		62	1	ments on Well R	U		
Depth to water surface (ft.)	79	3					
Length of water (ft.)	18	69	Add	tional Comments			
Volume of water (ft3)							
	~ 2	.99 02 3					
(gal.) Amount of sediment at			_	nine Callandari		1925	
bottom of well (ft.)				ples Collected:	Start _	0935	
LNAPL (ft.)	DNAPL (ft.)				Finish _		
IN-SITU TESTING Date:	9/9/93	9/9/93		9/9/93	<u> </u>	9/9/93	9/9/93
Time:	0810	0250	0830	0872	2028	0312	825
Water Level	7.93		6	9	12	`~	7.96
Well Volume Purged (gal.)		3				<u>)5</u>	7.54
Turbidity	NONG		none	none	<u>Tragur</u>	<u> 51.</u>	moble.
Odor Organic Vapor (ppm)	none	TOLL	none	none	_51_	<u>S1.</u>	mod.
pH (units)	8.73	7.91	7.94	7.68	7.88	7.68	7.76
Conductivity (µ mhos)	319	335	319	356	930	921	889
Water Temperature (°C)	51.3	55.7	55.3	\$5.2	55.)	55.5	55.4

Not**⇔**:

1 ft. length of 4*

≈ 0.087 ft³ or 0.65 gal.

1 ft. length 2° = 0.022 ft³ or 0.16 gal

Turbidity choices:

clear, turbid, opaque

Revision Date: 2-8-91

=	The	Escen	Technology
	_	~~~	-

GROUNDWATER SAMPLING

and Corporation				Sample ID:	Pzmw76m4		
PROJECT NAME		_ воц):		DATE: 9/4/93		
WELL NO. MW] LOCA	TION Motor	Pool	Site 2				
WEATHER CONDITIONS Cool Rain	>	AMBIEN	IT TEMP: ~	62°F			
PERSONNEL PALLAY and To	FNBETON						
REVIEWED BY:							
EQUIPMENT USED:							
PURGING DEVICE		SAMPI	LING DEVICE	•			
Type Device? Punp		_ Туре 0	Device? Ba	der			
How was the device decontaminated?	- logbook	_ How w	ras the device o	decontaminated	17 Serloghoule		
How was the ilne decontaminated?	e logbook	_ How w	res the line dec	ontaminated?	dedicated		
Which well was previously purged? 92	nwe	Which	well was previ	ously sampled?	, Prnw6		
INITIAL WELL VOLUME		PURGI	DNI				
Well dlameter (in.)		: Time s	El_ behan	38 F	inlahed 1410		
Stickup (ft.)		_ Volum	Volume purged				
Depth to bottom of well (ft.)	.8	_ Comm	enta on Well R	ecovery In	rmodiat		
Depth to water surface (ft.)	Le4						
Length of water (ft.)	8.16	Addition	onal Commenti				
Volume of water (ft3)	.18	_					
(gal.) ~]	.3	_					
Amount of sediment at bottom of well (ft.)		Sampi	es Collected:	Start _	1412		
LNAPL (ft.) DNAPL (ft	.)	_		Finish _	1425		
IN-SITU TESTING Date: 919193	9/9/93	9/9/93	9/9/93	9/9/97	9/9/13		
Time: 1 <u>338</u>	1344	1351	1358	1401	14 25		
Water Lavel . (6.64	-			****	6.68		
Well Volume Purged (gal.)	1.5	_3	4.5	6			
Turbidity <u>rvod</u>	mod.	_5),	51	Marc	Mad		
Oder <u>\$ 1.</u>	mod	<u>sl.</u>	51.	<u>s1.</u>	(d)		
Organic Vapor (ppm)	-				2.50		
pH (units) 8.14	<u>8.05</u> 524	<u>803</u>	8.07	7.89	7,88		
Conductivity (µ mhos) S48 Water Temperature (°C) G7.1	63.4	63.5	507 45.8	478 63.7	479 63.8		
	1				·····		
Notes: 1 ft. length of 4° Turbidity choices:	= 0.087 ft ³ or 0 clear, turbid,	-		2° × 0.022 m ³ o vision Date: 2	_		
TETC184							

The Estate Technology GR	OUND	VATER	SAMPL	ING [Sample ID	:PZMW6	GW4
PROJECT NAME Phalos	Collins	A G	JOB NO:	9318	T00-12	DATE: 9/10	143
WELL NO. MICC	LOCATIO	N Ste3				•	
WEATHER CONDITIONS Coo	1 Rainh		AMBIEN	ГТЕМР: 👊	-55°F		
PERSONNEL PHLA and	BFNO	2+81.					
REVIEWED BY: DeTaure							
EQUIPMENT USED: Bailer	Rop-	ama as	Sundle	Filter			
	7,			ING DEVICE	_		
PURGING DEVICE				rvica?			
Type Device? Benler		A-1 - 3.				ad? See logs	ort ski
How was the device decontamin	1 1	ested				(. 1 -	
How was the line decontaminate	S				econtaminated?		
Which well was previously purg	ed? <u>SIM</u>		- Which	well was pre	viously sample	d? SIMW	
INITIAL WELL VOLUME			PURGII			n! -	_
Well diameter (In.)	· · ·		_ Time s	tarted 1	345	Finished Plo	
Stickup (ft.)	3.3				lugale		
Depth to bottom of well (ft.)	27.	2'				roderate.	10
Depth to water surface (ft.)	1301	37 14.77	_ <u>1m</u> 2	nd, at	<u>e</u>		
Langth of water (ft.)		3.03	_ Additio	nai Comme	nts		
Volume of water (ft3)	0.	2867	_				
(g z l.)	_~ 2	•1	-	·			
Amount of sediment at bottom of well (ft.)			Sampl	es Collected	: Start	1222	
LNAPL (ft.)	DNAPL (ft.)		_		Finish	1620	
IN-SITU TESTING Date:	9/10/93	9/10/93	श्रीप्र	9/16/43	1/10/13		
Time:	1345	1381	1359	1403	1407		
Water Level	14.77						
Well Volume Purged (gal.)	inted	25	5	7.5	10		
Turbidity	<u>S1</u>	mod	nod	med	Vory		
Odar	54_	<u>S1.</u>	<u>mod</u>	mod	Mod		
Organic Vapor (ppm)	7.89	7.44	7,78	7.55	7.66	-	
pH (units)	952	991	502	<u>1.00</u>			
Conductivity (µ mhos) Water Temperature (°C)	\$5.7	56.2	S5.4	52.9	631		

Nates:

1 ft. length of 4°

= 0.087 ft³ or 0.65 gal

1 ft. length $2^{\circ} = 0.022 \, \pi^{3}$ or 0.15 gal

Turbidity choices: clear, turbid, opeque

Revision Date: 2-8-91

	1			
The Earth Technology GF	ROUNDWATER S	AMPLING	Sample ID:	P3MW7GV4
PROJECT NAME Phelps (dling ANG RI	JOB NO: 931	21.008	DATE: 3/15/93
WELL NO. MWT	LOCATION Site 3			
WEATHER CONDITIONS SW.	() -1	AMBIENT TEMP:	~65°F	
700				
REVIEWED BY: 1) a	ym			
EQUIPMENT USED: Pump 1	peristettic) Lose, Bo	wher pape		
PURGING DEVICE		SAMPLING DEVIC	ε .	
Type Device? Pump		Type Device?	inlea	
How was the device decontamin	nated? Seelosbeck	How was the devi	ca decontaminate	17 Seeloshorth
How was the line decontaminat	our dedicated	How was the line	decontaminated?	dedicated
Which well was previously purg	REPURY	Which well was pr	reviously sampled	Plomule Gwy Resomble
INITIAL WELL VOLUME	, 3	PURGING		
Well diameter (In.)	۲' '	Time started O	1925 F	Inlahed 1010
Stickup (ft.)	3	Volume purged!	65 gals	
Depth to bottom of well (ft.)	27' BTOC atmost	Comments on We	II Recovery 1m	mediate
Depth to water surface (ft.)	145			
Langth of water (ft.)	7.5	Additional Comm	ents	
Volume of water (ft3)	0.165			
(gai.)	2.1			
Amount of sediment at bottom of well (ft.)		Samples Collecte	d: Start _	1015
LNAPL (ft.)	DNAPL (ft.)		Finish _	1025
IN-SITU TESTING Date:		115/53 9/13/93	9/18/53	
Time:		953 1008	1625	
Water Lavel	1950 14.52	14.53	1452	
Well Volume Purged (gal.)	initial Zeal 4		-	
Turbidity	SI. More	none more		

Notes: 1 ft. length of 4°
Turbidity choices:

Organic Vapor (ppm)

Conductivity (µ mhos)

Water Temperature (°C)

= 0.087 ft³ or 0.65 gal. clear, turbid, opeque

1 ft. length 2° × 0.022 ft³ or 0.18 gai Revision Date: 2-8-91

TETC154

Odor

pH (units)

8.98

623

8.39

62.4

E TO CAPO THEN THEN THE GF	ROUND	WATER	SAMP	LING E	Sample ID:	P3mw16	wy
PROJECT NAME Phelos	Collin	s RI	_ JOB NO	93180	00-12 0	ATE: 8-15-	93
WELL NO. Mul		on Count	y Gara	u Sit	ī3		
WEATHER CONDITIONS Con	ol Cloud	L	AMBIEN	O ITTEMP: L	.S°F		
PERSONNEL PLLCA			-				
REVIEWED BY DAS							
EQUIPMENT USED: Pung	20 1000	bad	12 0 00				
EQUIPMENT USED:	7.002						
PURGING DEVICE			}	LING DEVICE			
Type Device? Pump			Туре С	Device? Bo	ube (
How was the device decontamin	nated? Se	e lospol	L How w	res the device o	econtaminated	, Sulogh	wh
How was the line decontaminate	6-0	cated		ree the line dec	ontaminated?	deduca	ted
Which well was previously purg	ed? Dyn	۱حیا	_ Which	well was previ	ously sampled?	100m 49	
INITIAL WELL VOLUME			PURG	ри		1015	
Well diameter (in.)	e)		Time s	Raned of 37	Fi	nished Di	5- 5-18-77
Stickup (ft.)			Volum	e purged	9 sallon	5	
Depth to bottom of well (ft.)	22		_ Comm	ents on Well R	ecovery In	mediet	<u> </u>
Depth to water surface (fL)	11	.3' BTOC	_				
Length of water (ft.)	PRUS -27	2.2 10.9	Additi	onal Comment			
Volume of water (ft3)	3 RU TO	9 ~0.24	F = 2				
(gai.)		.75	_				
Amount of sediment at bottom of well (ft.)	-	**************************************	Samp	les Collected:	Start _	1014	
LNAPL (M.)	DNAPL (ft.)		_		Finish	1030	
IN-SITU TESTING Date:	845-43	8-15-93	8-15-93	8-15-43	8-15-43	8-15-47	
Time:	0933	843	0453	1003	1013	1030	
Water Level	11.3					11.31	
Well Volume Purged (gal.)	-6 -	2	4	6	8		
Turbidity	none	none	none	none	none		
Odar	none	none	none	none	nons		
Organic Vapor (ppm)	-8.	-0.	-0-	-0	- 0 -	420	
pH (units)	7.85	8.17	8.13	8.20	8,18	8.20	
Conductivity (µ mho*)		115 PHU-203		258	2UH	763	
Water Temperature (°C)	5.40	(61.5	(el.2	<u>GD. 8</u>	40.6	61.2	
	. 4 . 4	= 0.087 m ³ or	0.00	1.81 Januari	2" = 0.022 m ³ o	r 0 16 cel	

Turbidity choices:

clear, turbid, opaque

Revision Date: 2-8-91

E the Earth Technology GF	ROUNDWA	TERSA	AMPLI	NG E	Sample ID:	P03 Mu	120,114
PROJECT NAME Phelps	Collins	RI	JOB NO:			DATE: 8 6	
WELL NO. MWA	LOCATION	Sik 3					
WEATHER CONDITIONS #	t, sunny, sib	reem	AMBIENT	TEMP:	950	F	
PERSONNEL PLAS	- J.Sn	nith					
REVIEWED BY: DP							
EQUIPMENT USED: Peri	stalic Pump	+ disposa	ble poly	ethlyles	ne hose;	teflorba	iles withdig
PURGING DEVICE			SAMPLIN	a DEVICE	netals =	> peristali	ic pump
Type Device? Peristali	crump			•		•	UCS, SVUCS, TIPH
How was the device decontami	nated? See loa	book			U	Durch	(onox -> Quito lok
How was the line decontamina	1007 See los	book				DIwater	-> methanve:
Which well was previously pur	Clam		Which we	ill was previo	County sampled	disposable n and used PO3 Mu	34W4
INITIAL WELL VOLUME			PURQING)	,		
Well diameter (in.)	2"		Time eter	ted	504 F	Inlahed	38
Stickup (ft.)	ν2'		Volume p	urged		gallo	ns
Depth to bottom of well (ft.) Bi	cc <u>32.</u>	21	Commen	u on Well Re	covery n	one	
Depth to water surface (ft.)	X18.	75					
Langth of water (ft.)	13.4	46	Additiona	il Comments	well	had so	me
Volume of water (#3)	0.3	3	dibi	2s (4	um vor	1e >) 11	alt.
(gail)	2.3		<u> </u>				
Amount of sediment at bottom of well (ft.)	~0.1' MA	Jus	Samples	Collected:	Start _	(53	
LNAPL (TL) NA	DNAPL (M.)	NM		(550	Finish _	155	5
IN-SITU TESTING Date:	8 ps/93 -						
Time:	A		193	1532	<u>'538</u>	1535	· .
Water Level of BTX			<u>177</u>	18.78	18.76	+ASTOR	
Well Volume Purged (gal.)			5	7	R.S.		25.73
Turbidity Odar		,		Vire	3 83:	St.	
Organic Vapor (ppm)	NM	UM V	IM.	NM.	ZZZ	NA	
pH (units)		.55 7	50	7.52	The	785	
Conductivity (µ mhos)	532 5			4.88	3	559	
Water Temperature (*#) 0F	76.9 63	3.8	20	61.4	do	63.9	
Hotee: 1 ft. length c	of 4° • 0.0	87 ft ³ or 0.65 ga	ıL	1 ft, length 2	r • 0.022 π ³ o	r 0.16 gal	
Turbidity en	01C es ; Cles i	turoid, opaqu	•		sion Date: 2	•	

NM = Not Measured

G-49

BTOX = Below Top & (Outer skel) (asing

Revision Date: 2-8-91

Type Device? PEXTSTALIC How was the device decontamin			O	potable+allonox	7 Otaber 7
How was the line decontaminate Which well was previously purg	Selogbook	_ How wee the line		disposable newny	don time
Well diameter (in.) Stickup (ft.)	~ 2" ~2'	PURGING Time started Volume purged	09-51 FI	nlahed 1014 gallons	
Depth to bottom of well (ft.) BIC Depth to water surface (ft.) BIC Langth of water (ft.)	C 14.08	Comments on We		None	
Volume of water (#13)	0.24	-			_
Amount of sediment at bottom of well (ft.)	NM DNAPL (N.) NM	Semples Collecte Sangle to		1014	_
LNAPL (ft.) NM	BRAFE (IL)				
IN-SITU TESTING Date:	0951 1000	10:06 1013	-	1030	_
IN-SITU TESTING Date: Time: Water Level & BTX	<u>6 5 93</u> - <u>1000</u> <u>14.12</u> <u>14.12</u>	14.12 14 D	1407	1030 1030	
IN-SITU TESTING Date: Time: Water Level If BTX Well Volume Purged (gal.)	0951 1000		1401	1030 16.5 Uan	
IN-SITU TESTING Date: Time: Water Level If BTX Well Volume Purged (gal.)	8/5/93 0951 1000 14.12 14.12 0 2.5 51.closely clear None none	14.12 14 D 4.5 6.0 clear clear none	1487	Clean _ none _	
IN-SITU TESTING Date: Time: Water Level If BTX Well Volume Purged (gal.) Turbidity	8/5/93 0951 1000 14.12 14.12 0 2.5 St. closely clear None none NM NM	14.12 14 D 4.5 G.O clear clear none none NM NM	148 January 1981	16.5 Clear none NM	
IN-SITU TESTING Date: Time: Water Level If BTX Well Volume Purged (gal.) Turbidity Odor	8/5/93 0951 1000 14.12 14.12 0 2.5 51.closely clear None none	14.12 14 D 4.5 6.0 clear clear none	148 January 1981	Clean _ none _	

NM = Not Measured

G-50

BTOX = Below Top & (Outer steel) (asing

GROUNDWATER SAME	PLING Sample ID: PO3 MW4 GW4
PROJECT NAME Phelos Collins RI JOB	NO: 931800-12 DATE: 8/25/93
WELL NO. MW4 LOCATION SIK 3	
WEATHER CONDITIONS SURRY Clear, St. breeze AMB	SENT TEMP: ~ 80 of
PERSONNEL J.Smith, P. Lay	
REVIEWED BY: DETaym	
EQUIPMENT USED: Peristalic Pump y disposable	polyethlylene hose; tefforbailer withdisposable
PURGING DEVICE SAN	MPLING DEVICErmetals -> peristalic pump
	tunless sky tetton miler for VOCS, SVOCS, TPH
How was the device decontaminated? See logbook How	www.the device decontaminated Politick & Michael Politick
	DI water -> methanut; airdry
S'42 2 44 73	cord used each time ich well was previously sampled? PO3 MW3 GW4
INITIAL WELL VOLUME PUR	RGING
Well diameter (In.)	ne started 1049 Finished 1119
Stickup (ft.) 22 Vois	ume purged ~8 gallons
	mments on Well Recovery 10nl
Depth to water surface (ft.) BTX 18.32	
Langth of water (ft.) 4511 35 32 76 63 13.68 Add	ditional Comments Nove
Volume of water (ft3) 6.37 0.30	
(gal.) 272.18	
Amount of sediment at bottom of well (ft.)	mples Collected: Start 1120
	uple time. Finish 1140
4 hda3	1 140
IN-SITU TESTING Date: 0.7-7-12 1108	119 1124 1135
Water Level # BTX 18.37 1835 1835	
Well Volume Purged (gal.) 0 2.5 5	1.5
Turbidity Clear clear illar	com I louly
odor Nine has has	
Organic Vapor (ppm) NM NM NM	NN FEB NN
pH (unite) 7.83 7.77 7.73	
Conductivity (µ mhos) 6.93 474 463 Water Temperature (12) 0F 73.5 64.1 63.2	538 64.3 67.6 67.6
us x/x1/73	2 64.3 60 67.6
Notes: 1 ft. length of 4" = 0.087 ft. 2 or 0.65 gal.	1 ft. length 2" = 0.022 ft ³ or 0.16 gal
Turbidity choices: clear, turbid, opaque	Revision Date: 2-8-91

NM = Not Measured

G-51

Of Somph O

BTOX = Below Top of (Outer steel) Casing

		-			((1300)	
Corporation	GROUND	WATER	SAMPL	ING IS	ample ID:	PO P3M	wsc. well	(down le
PROJECT NAME Ph	elas Collin	s Rl	ОН ВО С	: 13180		ATE: 8/26		VO JUMSM
WELL NO. MILL	S LOCATIO	0.1	3					11:30
WEATHER CONDITIONS	Sunny hum	id, com	AMBIEN	T TEMP:	~ 80 %			
PERSONNEL P	Lay + J.	Inita						
REVIEWED BY:	Fraym							•
EQUIPMENT USED:	Peristalic Pu	np + dispo	suble po	lyethlyler	re hose;	teflorbai	es withd	isposable
PURGING DEVICE	4 -		SAMPL			peristalic		
Type Device? Pen	stalic Pump		. Туре О	evice?	effontail	er for vo	(s, SVOCS, TI	It with Jets 8
How was the device dec	contaminated? Se	10gbook	. How w	es the device d	econtaminated	Potuble + alco	nox-7 pot	ok=>
How was the line decon	•	logbook	. How w	se the line deco	ontaminated?	lisposable ne vd used e	waylan	_
Which well was previou	sly purged7Sik3	MWZ	Which	well was previo				
INITIAL WELL VOLUME			PURGI	ио				
Well dismeter (in.)	2	<i>(</i> /	∏mes	taned	942	nished	10	
Stickup (ft.)	2		Volum	purged	~30	gallor	15	
Depth to bottom of well	(n.) BloC	<u> 57.54 °</u>	Comm	ents on Well Re	covery	rere		
Depth to water surface ((n.) BTOC	18.50	.					
Langth of water (ft.)		39.04	Additio	onal Comments	<u>nes</u>	re		
Volume of water (ft3)		0.86	-					
(gai.)		6.2	-					
Amount of sediment at bottom of well (ft.)		NM	1 '	ee Collected: Thruconsumply	Start _	1111		
LHAPL (TL)	DNAPL (fl.)	NM	1	Kine ondup	7	1138		
IN-SITU TESTING	Date: 8 1493	10.00		/2		. 1.2	>	
	Time: 0943	1002	1021	1040	1101 1657			
Water Lavel # BTX Well Volume Purged (ga		<u>:1858</u> 5	185°	18.58	20	1847	~22.	
Turbidity	Clea	cler-	Clear	Clear	Clean	رچ .	Clea-	
Odar	None	none	none	none	nove	7	nore	
Organic Vapor (ppm)	hw	NW	NM	nm .	<u></u>	3 2	NM NM	
pH (units)	7.17	7.92	8.18	8.03	8:11	53	8.81	-
Conductivity (µ mhos)	0E 70.5	323 ·	432	340	335	250	65.5	
Water Temperature (*)	of 170.5			[बद्र	<u>63.7</u>			
Hotes: 18	length of 4"	-0.087 83 000	AS AAI	1 # Jacob	2" = 0.022 #3 6	C 0 16 Cal		1

Revision Date: 2-8-91

NM = Not Measured

G-52

BTOX = Below Top & (Outer steel) (asing

FIGURE 3-2

GROUNDWATER SAMPLING

Corporation		Sample ID: P4mw1Gw4				
PROJECT NAME Phelps	Collins	JOB NO: 931800 DATE: 8-14-93				
WELL NO. MWI	LOCATION Site !	Ц				
WEATHER CONDITIONS Sur	my warm	AMBIENT TEMP: 7 Ce F				
PERSONNEL PH Lan	ME Stoker					
REVIEWED BY: 15 Brue		* samples unusable - arrived warm				
EQUIPMENT USED: Baile	spoke, pung	assembly, filter				
PURGING DEVICE		SAMPLING DEVICE .				
Type Device? Bailer		Type Device? Baile(
How was the device decontamina	sted? Seelogbook	How was the device decontaminated? See logbown				
How was the line decontaminated	or <u>dedicated</u>	How was the line decontaminated? ded.cuted				
Which well was previously purge	15 mw 2	Which well was previously sampled? P5mw2				
INITIAL WELL VOLUME		PURGING				
Well diameter (in.) 2 //		Time started 6926 Finished 0945				
Stickup (ft.) 2'	W	Volume purged 9 Sals				
Depth to bottom of well (ft.)	34.0	Comments on Well Recovery				
Depth to water surface (ft.)	53.5'					
Langth of water (ft.)	12.8	Additional Comments				
Volume of water (ft3)	<u>্</u> য					
(gal.)	~ 2					
Amount of sediment at bottom of well (ft.)		Samples Collected: Start 10/6				
LNAPL (ft.)	DNAPL (ft.)	Finish 1050				
IN-SITU TESTING Date: 2	28/14/93 8/14/8	8-14-93 8-14-73 8-14-93				
Time:	0926 0930	6935 0940 0945 1015				
Water Level	23.2	73.2 23.2				
Well Volume Purged (gal.)	\$ 2	St 8-4-12 SI. PAL SI. PAL				
Turbidity	NOT MONE					
Odor	None Nove	how how none				
Organic Vapor (ppm)	<u>-0-</u>	0 0 0				
při (unite)	9.16 8.34	8.38 8.36 8.38 6.55				
Conductivity (µ mhos) Water Temperature (*C)	314 <u>268</u> 50.8	272 268 264 266 56.5 56.4 56.8 56.7				
Notes: 1 ft. length of Turbidity chai						
Terrorate	Com. Great, turbid, t	opeque Revision Oate: 2-8-91				

TF4MWI Resuper

E The Earth Technology GR	OUNDWATER	SAMP	ING Is	ample ID:	of music	y	
PROJECTNAME Phelps	Collins		: 931800 -	17 DA	TE: 8-1	7-93	
WELL NO. MUI	LOCATION SITC	4 Thir	d free-	training	urea		
WEATHER CONDITIONS Hot	HAZL	AMBIE	IT TEMP: -8	S°F			
PERSONNEL PALLES	ME Stoker						
REVIEWED BY: 150	negel 9/21/9:	3 * we	Il resample	1 - sample	les errived	at lab war	
EQUIPMENT USED: Bank	er, Rope, pun	plassen	by filt	ود			
PURGING DEVICE		SAMP	LING DEVICE,	•			
Type Device? Bailer		Туре С	perice? Bai	ler			
How was the device decontamin	nated? See lost	k How w	vas the device de	contaminated?	See log	soon	
How was the line decontaminate	or <u>dedicated</u>	How w	ree the line deco	ntaminated?	dedice	red	
Which wall was previously purg	ed?	Which	well was previou	usly sampled?			
INITIAL WELL VOLUME		PURG					
Well diameter (in.)		Time i	maned 144	<u>Z</u> Fir	nished 150	03	
Stickup (ft.)		Volum	Volume purged 10 sals				
Depth to bottom of well (ft.)	36	Comm	Comments on Well Recovery Immediate				
Depth to water surface (ft.)	23.21	_					
Langth of water (ft.)	12.79	AddRi	onal Comments				
Volume of water (ft3)	0.28						
(gai.)	_ ~ 2						
Amount of sediment at bottom of well (ft.)		Samp	ica Collected:	Start _	1523		
LNAPL (M.)	DNAPL (H.)			Finish	1550		
IN-SITU TESTING Date:	8-17-93					15.33	
Tim•:	14:46 A:49	14:51	<u> 14:53</u>	14:57	1501	75 23	
Water Lavel	23.21	4	6	8	<u>23.25</u> 0\	23.22	
Weil Volume Purged (gal.)	$\frac{\beta}{5l}$ $\frac{2}{5l}$	mad	سما	mod	mod	mod	
Turbidity Odar	Note you	NON	None	none	none	hone	
Organic Vapor (ppm)	-00-	- 0-	-0-	- 0-	-0.	_0 -	
pH (units)	7.75 7.64	7.70	7.67	7.68	7.65	7.67	
Conductivity (µ mho=)	314 295	258	278	242	245	249	
Water Temperature (*C)	64.0 60.2	59.9	<u>56.8</u>	56.7	569	56,7	
Notes: 1 ft. length o				2" = 0.022 π ³ ο			
Turbidity cne	, opaque	Rev	taion Date: 2	-6-91			

E Competition	OUNDWATE	R SAMP	LING	ample ID:	PO46MW	+2	
PROJECT NAME Phelps	Collins RT	JOB 1	10: 93180	0-12 DA	TE: 8-11-93	5-4-93	
WELL NO. MOH MW	2 LOCATION S. TE	<i>f</i> .			ne wea		
WEATHER CONDITIONS COE			ENT TEMP: ~7		0		
PERSONNEL P.H. LAY	0						
REVIEWED BY 15 Bree	_						
		- 1 1	, (2, -	. 811-			
EQUIPMENT USED: Ba 100	, Rope, pung	ssenbly	++1+1	37,1401			
PURGING DEVICE			PLING DEVICE	•			
Type Device? Bailer		Тур•	Device? Bail	er			
How was the device decontamin	ated? See losbook	How	was the device di	econtaminated?	See 1 ochoo	٨	
How was the line decontaminate	dedicated	How	was the line deco	ontaminated?	dedicated		
Which well was previously purg	BAL Dulance	3_ Which	th well was previo	usly sampled?	samo 3		
INITIAL WELL VOLUME		PUR	оию				
Weil dlameter (In.)		Time	maned 10	09 Fin	ished 1021		
Stickup (ft.)		Volu	me purged	Sedlons			
Depth to bottom of well (ft.)	37.2 BTX	Com	Comments on Well Recovery Immediate				
Depth to water surface (ft.)	29' 3700						
Langth of water (ft.)	8.2'	Add	Additional Comments				
Volume of water (ft3)	0.18						
(gai.)	-1.3						
Amount of sediment at	_	Sam	piec Callected:	Start _	025		
bottom of well (ft.)	DNAPL (M.)			Finish	1034		
IN-SITU TESTING Date:	8-11-43 8-11-43	8-11-53	8-11-43	8-11-93			
Time:	1009 1013	1017	1021	1034			
Water Level	29'		_	29.03			
Well Volume Purged (gal.)	-0- 2	4	_5_				
Turbidity	51 51.	51.	51.	51.			
Odar	none non	Non	nort	200			
Organic Vapor (ppm)	_0-	-0-		- <u>, , , , , , , , , , , , , , , , , , , </u>			
pH (units)	7.57	7.92	7.69	7.58			
Conductivity (µ mnos)	<u> 299 271</u>	369 56.8	310	320 51-7			
Water Temperature (*C)	60.1 58.1		56.5	56.7			
Notes: 1 ft. length of		or 0.65 gal.	-	z* = 0.022 m ³ or			
Turbidity cno	ices: clear, turbi	d, opaque	Rev	tsion Date: 2-i	5-91		

GROUNDWATER SAMPLING Sample ID: Po46MW3

				5	ample ID:	1016110			
PROJECT NAME Phelos C	ollins A	I.	JOB NO:	931800	-12 DA	TE: 8-11	-93		
WELL NO. MW3	LOCATIO	n Site 4	Third	Fire tro	ining ar	ec.			
WEATHER CONDITIONS COC	1 -70	•	AMBIENT	тЕМР:~ <u>}с</u>	• `				
PERSONNEL PALON									
REVIEWED BY: 15 3m	ezel ?	1/21/23							
EQUIPMENT USED: Baile	-, pup	essembly,	fittings	, filter	, rofl				
PURGING DEVICE				ING DEVICE					
Type Device? Bailer			_ Туре Ое	Mcer Bail	ec				
How was the device decontamin	ated?	ogboot	_ How wa	s the device de	contaminated?	Sep 108	ook_		
How was the line decontaminate	dec	Picated	_ How wa	e the line deco	ntaminated?	dedicas	ted_		
Which well was previously purg	ed? <u>n</u> t	200	_ Which v	veli was previo	usiy sampled?	2000			
INITIAL WELL VOLUME			PURGIA	10					
Well diameter (in.) 2			_ Time et	ened 085	8 Fir	nished D92	20		
Stickup (ft.) 2'			1	Volume purged 7.5 Sal					
Depth to bottom of well (ft.)	34.7	Broc	Comme	Comments on Well Recovery Insmediate					
Depth to water surface (fL)	74.	85 Broc	_						
Langth of water (ft.)	10,1	DS	_ Additio	Additional Comments					
Volume of water (f13)			_						
(gat.)	1.0	egal	_			· · · · · · · · · · · · · · · · · · ·			
Amount of sediment at bottom of well (ft.)			Sample	■ Collected:					
LNAPL (ft.)	DNAPL (ft.)		_		Finish	9940			
IN-SITU TESTING Date:	8-11-93	8-11-63	8-11-93	8-11-53	7-11-47	8-11-93			
Time:	858	0906	0912	0918	09:20	0940			
Water Level	26.85				26.94	26.95			
Well Volume Purged (gal.)	in.tim	2gal	3.5	5 gal	7 sal				
Turbidity	51.	51.	<u>SI</u>	57.	51.	SI			
Odar	none	<u> 1000 4</u>	aux	NOV	Name	<u>nont</u>			
Organic Vapor (ppm)	-0.	-0-	-0-	-0~	26	-0-			
pH (units)	8.22	7.71	8.30	8.37	8.20	8.30			
Conductivity (µ mhos)	477	424	431	424	414	430			
Water Temperature (*#)07=	2.00	<u>58.8</u>	58.4	<u>57.6</u>	58.5	58.5			
Notes: 1 ft. length o	of 4°	≥ 0.087 ft ³ or 0	0.65 gaL	1 ft, length	2" = 0.022 n ³ o	r 0.16 gal			
Turbidity ch	oic ⇔:	clear, turbid,	opeque	Rev	delon Dete: 2	-8-91			
TETC154									

		Sample ID. 1 0 (OT)(30)				
PROJECT NAME Phelps Collins	BI	JOB NO: 93/800-12 DATE: 8-12-93				
WELL NO. MW4 LOCA	TION SITE 4	Third Fice Tearing Area				
WEATHER CONDITIONS Sunny	not hazy	AMBIENT TEMP: 85°F				
PERSONNEL PH Ca , ME						
D	21/93					
EQUIPMENTUSED: Bailer, 700	68-e-93 com					
EQUIPMENT USED: DOCTO , TO	8) pur	1 assembly				
PURGING DEVICE		SAMPLING DEVICE				
Type Device? Balor		Type Device? Bai. 18(
How was the device decontaminated?	e Logbook	How was the device decontaminated?				
How was the line decontaminated?	dicuted	How was the line decontaminated? ded, cateb				
Which well was previously purged?	Zmw5	Which well was previously sampled? Pozmws				
INITIAL WELL VOLUME		PURGING				
Well diameter (in.)		Time started 1454 Finished 1513				
Stickup (ft.) _ ~ 2'		Volume purged 7.5 gal-				
	e.4' BTOC	Comments on Well Recovery moderate				
Depth to water surface (fL)	7.56 BT OC					
Length of water (ft.)	8.84"	Additional Comments				
Volume of water (ft3)	194					
(gai.)	1.4					
Amount of sediment at bottom of well (ft.)		Samples Collected: Start 1545				
LNAPL (ft.) DNAPL (ft	-)	Finish _1615				
IN-SITU TESTING Date: 8-12-9:	8-12-53 8	8-12-93 8-12-93 8-12-93				
Time: 1454	1458	1503 1506 1545				
Water Level 2756		33.35 27.67				
Well Volume Purged (gal.)		4 6 ~ _				
Turbidity <u>clean</u>	<u> </u>	<u>5l s/ 31</u>				
Odor Now	won _	None wome home				
Organic Vapor (ppm)		678 837				
437		8.28 8.32 8.46				
Water Temperature (°C)		326 <u>474</u> <u>flo</u>				
Nates: 1 ft. length of 4° Turbidity choices:	= 0.087 ft ³ or 0.65 g					
TETCINA	5.11., 101010, 0paq	4 Meanainii Ogia; 7-0-21				

PROJECT NAME Phops Colli	as AT			ON BOL	931800-1	ZDATI	E: 8-15-9	3	
PROJECT NAME 1 VOLAS COLLI	OCATON	5t.5	-0	- 1 - 6	1-5-11 2no		4		
				8-15-	93 TEMP: ~72	• 7	7		
WEATHER CONDITIONS Cool WI		_							
PERSONNEL MESTOKEL	1 - 2 -	8							
REVIEWED BY DKT									
EQUIPMENT USED: Pup, Lus	e Bu	ler, f.) to						
PURGING DEVICE					NO DEVICE				
Type Device? Pury				-	rice? Baul		en lada	ol	
How was the device decontaminated?	Sulcyb	ack					See logs	0	
How was the line decontaminated?	ded u	atech_			e the line decont		ded, cut	(a	
Which well was previously purged?	PBMu)		Which w	reli was previous	ky sampled?	PEMWI		
INITIAL WELL VOLUME				PURGIN		•	151	-	
Well diameter (in.)			-				151	,	
stickup (tt.) ~ 2 "			-	Volume purged 13.5 sals					
Depth to bottom of well (ft.)	22.33		-	Comments on Well Recovery Image dist					
Depth to water surface (性)	7.29		-						
Langth of water (ft.)	15,0	4	-	Additional Comments					
Volume of water (ff3)	0.3	3	_						
(gal.)	7.4		_						
Amount of sediment at				Sample	Callected:	Start _	1530		
bottom of well (ft.)			_			Finish	1550		
GAPE (III)	15-93	8-15-93	0	-1 5-1 3	8-15-93	8-15-43	8-15-13	8-15-93	
IN-SITU TESTING	123	1433_		439	1450	1458	1512	1230	
	7.29		_					7.35	
Mater Paren	0 ·	2.5	_	5	7.5	10	13	<u> </u>	
Hell folding (signs (\$==)	51.	51.	_	SL	51	_5!_	<u>S1</u>	51	
	CEANLE	SI	_	51	51_	_SL_	<u> </u>	<u> </u>	
1	٠- ك		-			1 56	4.95	6.78	
pri (dilitie)	294	(e,(e)		2.15	<u>6.17</u> 438	6.50 45t	474	408	
Conductivity & miles	517	445 64.1	454		635	67.8	101.7	62.5	
Water Temperature (°C)	658					2° = 0.022 m ³			
Nates: 1 ft, length of 4		± 0.057 ft ³ or							
Turbidity choices: clear, turbid, o				opaque Revision Date: 2-8-91					

The Earth Thicknessay GF	ROUND	WATER	SAMP	LING E	Sample ID:	PSMW	26w4
PROJECT NAME Phelps	Collins A	3I	M BOL	0: 93180	٥٠١٧ ٥	ATE: 8-1	3-13
WELL HO. MWZ	LOCATIO	on <u>Sites</u>	5				
WEATHER CONDITIONS Su	nnyhot	huz	AMBIE	NT TEMP: 8	Sor		
PERSONNEL PHLO	, -	_					
REVIEWED BY: DFJ							
EQUIPMENT USED: 30	c, Pump	Assubly	Filter				
PURGING DEVICE		****		LING DEVICE			
Type Device? Bailer			Туре	Device? Bai	lec		
How was the device decontant	nated? See	losboot	_ How s	vas the device o	econtaminated	7 See	oghooh
How was the line decontaminat	or dec	1, cuted	_ How s	ves the line dec	ontaminated?	decli	cated
Which well was previously pure	ed? P5n	lw 4	_ Which	ı well was previo	ously sampled?	75mc	۵4
INITIAL WELL VOLUME			PURG	IING			
Well diameter (in.)			_ Tim•	maned 17	50 F	inished	1800
Stickup (ft.)			Volum	Volume purged 10 cals			
Depth to bottom of well (ft.)	21	2' BTGC	i	nents on Well Re	0		
Depth to water surface (ft.)	بها	t' Broc					
Langth of water (ft.)	14	18'	Addit	Ional Comments			
Volume of water (ft3)							
(gal.)	~ 2	.4					
		×	Same	les Collected:	~ -	1817	1835
Amount of sediment at bottom of well (ft.)			Semp	iss collected.	Start P	46-139-	1845
LHAPL (ft.)	DNAPL (ft.)				Finish _	4	78-13
IN-SITU TESTING DATE:		8-13-97	8-13-93	8-13-93	8-13-93		
Tim•:	1750	1752	1754	1757	1860	1835	
Water Level	<u>6.4'</u>			7.5	6.65	<u>6.45</u>	
Well Volume Purged (gal.)	-0.	2.5	5		10		
Turbidity	none	S	none	ned	nene	none	
Odor Organic Vapor (ppm)	none	-0.	- 0·	-D -	-0.	_ 0 -	
pH (units)	7.69	7.90	7.69	7.55	7.54	1,71	
Conductivity (µ mhos)	149	198	197	203	193	210	
Water Temperature (*C)	70.1	44.7	65,4	64.9	676	67,6	
Notes: 1 ft, length (of 4°	± 0.087 π ³ or 6	0.65 gai.	1 ft. length	z* = 0.022 n ³ o	or 0.16 gai	
Turbidity ch				Re	vision Date: 3	2-8-91 ~	

 77	EART	Decume to di	
	HOT IT AS		

GROUNDWATER SAMPLING

Resunde	

Corporation	Sample ID: POSMWZGW9
	JOB NO: 93/800-12 DATE: 8/24/93
WELL NO. MUZ LOCATION 51K	5
WEATHER CONDITIONS SURRY MERRY WENT	AMBIENT TEMP: ~ 75 °F
PERSONNEL P. Lay & JSmith	
REVIEWED BY: DET	
EQUIPMENT USED: Pump shose, typion b	aler
PURGING DEVICE	SAMPLING DEVICE
Type Device? <u>Peristalic</u>	Type Device? - tylon balls
How was the device decontaminated? Sulogook	How was the device decontaminated? Sulo shook
How was the line decontaminated? 13 now	How was the line decontaminated? IB New
Which well was previously purged? SIR5, MW4	Which well was previously sampled? POSMW44W4
INITIAL WELL VOLUME	PURGING
Well diameter (in.)	Time started 1900 Finished 1925
Silckup (ft.)	Volume purged
Depth to bottom of well (fl.) BTBC	Comments on Well Recovery
Depth to water auriace (ft.) 6.57	
Length of water (ft.) 14. 63	Additional Comments
Volume of water (ff3) 0.32	
(gal.) 2.3	
Amount of sediment at bottom of well (ft.)	Samples Collected: Start 1935
LNAPL (fL) NM DNAPL (fL.) NM	Finish1936
IN-SITU TESTING Date: 8/24/43	1918 1924 1928 1936
Time: 1900 1909 1	1.07 NM 6.71 NM
0 11 36	5 7 7
Close A class	dear den de clear
Odor Nove Note	None hore a none
. /	nn 22 nn ni
	7.08 7.08 7.22
Conductivity (µ mnos) 141 145	152 153
Water Temperature (°C) 71.1 65.5	64.8 64.2 00 64.1
Notes: 1 ft. length of 4" = 0.057 ft. or 0.65 (Work the
Turbidity choices: clear, turbid, open	que Revision Date: 2-8-91 SULVE SILVE
/immel itel with y	2 2 0
1M = not moroured G-6	
MM = not moasured mediation G-6	κ 3 FIGURE 3-2
	6 9 gallon inin

		1
	-	
		1

= The Earth Technology GR	OUNDWATER S	SAMPLING Sample ID: P5 mw36w4
PROJECT NAME Phelps (WINS RT	JOB NO: 131500-12 DATE: 8-13-93
WEATHER CONDITIONS 5		AMBIENT TEMP: ~75°F
PERSONNEL PHL REVIEWED BY DEJ		
EQUIPMENT USED: Pung	Bailer, Nove, F	ilter
PURGING DEVICE		SAMPLING DEVICE .
Type Device? 650 puns	. 2	Type Device? Bailer
How was the device decontamin	area? See logbook	How was the device decontaminated? See loghook
How was the line decontaminate	or sulosbook	How was the line decontaminated? checkented
Which well was previously purg	ed? PEMWS	Which well was previously sampled?
INITIAL WELL VOLUME		PURGING
Weil diameter (in.) Z"		Time started 1055 Finished 1144
Sticknib (ur.)		Volume purged 11 Self
Depth to bottom of well (ft.)	22.47BTOC	Comments on Well Recovery Moderate to
Depth to water surface (fL)	8.07 BTDC	1 mmediate
Length of water (ft.)	14.4	Additional Comments
Volume of water (#3)	~ 2.3	
(gal.)		
Amount of sediment at bottom of well (ft.)		Samples Collected: Start 1/45
LHAPL (ft.)	DNAPL (ft.)	Finish 1153
IN-SITU TESTING Date:	8-18-43 8-13-43	87-13 815-53 8-13-93 8-17-53
Time:	1182 1201 1108	1115 1126 1/35 1148
Water Level	9.07	
Well Volume Purged (gal.)	-0- Z'29	<u>59</u> 7.59 109 3-6-
Turbidity	none None	Now Now now made
Odar	none none	North Ang Nove non
Organic Vapor (ppm)	- 0- -0-	102
pH (units)	7.68 8.12	1.10
Conductivity (µ mño≡)	<u>263</u> <u>272</u> 725 68.5	266 268 259 367 65.6 66.4 66.4 66.4

Not⊷:

t ft. length of 4°
Turbidity choics:

= 0.087 m³ or 0.65 gal. clear, turbid, opaque 1 ft. length 2° = 0.022 ft³ or 0.16 gal Revision Date: 2-6-91

= The Earth Technology GF	ROHND	WATEE	SAMP	LING -				
= Corporetion	10011	AAVITI	- JAIVIT	LING	Sample ID	: P5MW46	1W4	
PROJECT NAME ? Helps Collins RT JOB NO: 93/8 00-12 DATE: 8-13-13							13	
	WEATHER CONDITIONS Sunny hot, hazy AMBIENT TEMP: 82°F							
			AMBIE	NT TEMP:	82 F			
PERSONNEL PHLay MS Blizzard								
REVIEWED BY:	REVIEWED BY: DEJ							
EQUIPMENT USED: Ba, le	EQUIPMENTUSED: Bailer, purp assembly, F. Iter							
PURGING DEVICE			SAMP	LING DEVICE	•			
Type Device? Bailer			Тур• б	Device? Ba	iler			
How was the device decontami	nated? Sec	logbook	How w	vae the device	decontaminate	or See Logh	004	
How was the line decontaminat	·or ded	icated	How w	vee the line dec	contaminated?	ded, cety	<u>d</u>	
Which well was previously purg	red? PSn	1W36W4	Which	Which well was previously sampled? PSMW3 C, W4				
INITIAL WELL VOLUME			PURG	PURGING				
Well diameter (in.) 2"			TIme :	Time started 1708 Finished 1730				
Stickup (ft.) Z'			1	Volume purged				
Depth to bottom of well (ft.)	23	.65' BTOO	Comm	Comments on Well Recovery Immed. atc				
Depth to water surface (ft.)		BTOC	_					
Langth of water (ft.)		×22,	Additi	Additional Comments				
Volume of water (#13)								
(gai.)	_~ 2	, 5	_					
Amount of sediment at bottom of well (ft.)			Sampl	⇔ Callected:	Start _	1812		
LNAPL (ft.)	DNAPL (fl.)		_ [Finish _	1825		
IN-SITU TESTING Date:	8-13-93	5-13-93	8-13-93	8-13-47	8-13-53	5-13-93		
∏m•:	1768	1720	1724	1720	1799	1812 1817 PA- 8-13-13		
Water Level	8.1	<u>-</u>			835	8.2		
Well Volume Purged (gal.)	-0-	2 .5	5	7.5	10	pagel		
Turbidity Odor	none	Sl. none	none	none	none	PHL 8-13-47		
Organic Vapor (ppm)	-0-	-0 -	-0-	-0.		<u>- v - </u>		
pH (units)	7.59	7.65	804	7.86	7.75	7.82		

TETC:34

Nat⊷:

Conductivity (µ mhos)

Water Temperature (*C)

208

8.80

173

72.7

1 ft. length of 4*
Turbidity choices:

194

70.3

= 0.087 ${\rm ft}^3$ or 0.65 gaL

clear, turbid, opeque

208 67.7 206

67.5

1 ft. length 2" = 0.022 ft³ or 0.16 gal

Revision Date: 2-8-91

707

67.4

_	-		
_		EARTH	Decumental.
_	COMP	HOLEKHO	•

GROUNDWATER SAMPLING

	Resampl
Sample ID:	P5MW4GW4

PROJECT NAME Pholos	Collins	RI		JOB NO	: 9318C	10 <u>210</u>	ATE: 8 24	193_
WELL NO. MW4	LOCATIO		5					
WEATHER CONDITIONS SUN M	y brees	m, 80°	F	AMBIEN	IT ТЕМР:	~80°	F	
PERSONNEL Play	<u>a</u>	Smit	5					
REVIEWED BY:	Γ							
EQUIPMENT USED: PUM	P. ben	confe	(te	~	, horse			
PURGING DEVICE		C		SAMP	LING DEVICE			
Type Device?	stulic		.	Туре О	evice? ba	ulas (te	Han)	
How was the device decontamin	ated?	e lugbook	-	How w	as the device de	contaminated	sce lo	of will
How was the line decontaminate	١	w	.	How w	vas the line deco	ntaminated?	hen)
Which well was previously purg	ed? MU	13 SIKS	-	Which	well was previo	usiy sampled?	MW3	5,45
INITIAL WELL VOLUME				PURG		(
Well diameter (In.)	2"		_	Time≠	named 16	204 FI	nished	635
Stickup (ft.)	~2'		-	Volum	■ baldeq ——		10 grl	
Depth to bottom of well (ft.) BTC	c	3.65	-	Comm	ents on Well Re	covery	Mh	
Depth to water surface (ft.) BT		_	_			.,		
Langth of water (ft.)		5.4	-	Additi	onal Comments		mre	
Volume of water (ft3)		3388	-					
(gai.)	<u> </u>	2.5 gl	-				*	
Amount of sediment at	NM	V		Samp	ies Collected:	Start _	1640	
LNAPL (ft.)	DNAPL (ft.)	NM	-			Finish _	1656	
	×124193							
IN-SITU TESTING Date:	1604	1613	16	19	1679	1634	1656	
Water Level for BTDC	8.25	8.46	8	.45	8.47	8.46		
Well Volume Purged (gal.)	6	25	5	5	7.5	9	-0	
Turbidity	clean	deer	cl	ear	clear	Clear	51.	
Odor	nore	nove		we	Mre	none	none	
Organic Vapor (ppm)	MAN	NAM	_	100	NM	NM	na	
pri (units)	7.61	7.01	_	32	1,14	7.06	7.31	
Conductivity (µ mho=)	184	167		78	180	(81	202	
Water Temperature (*¢) Ç	746	71.5	7	0.4	70.5	70.6	70.7	
Notes: 1 ft. length o	1 4*	= 0.087 R ³ or 0	.65 g	al.	1 ft. length	z* = 0.022 π ³ c	or 0.16 gel	
Turbidity chi	oices:	clear, turbid,	opaqı	J•	Rev	tsion Date:	2-8-91	

-top pumping 14404 collect netulo G-63

NM-notneusured NA=notneusured NA=not raphicable

= The Carte Technology GROUND	WATER SAMP	LING Sample ID: P5 M W5	GW41
PROJECT NAME Pholos Collin			93
WELL NO LOCATIO	on Sik 3		
WEATHER CONDITIONS (100dy, bree	my dry AMBIEN	NT TEMP: 70°F	
PERSONNEL Smith - M	Stoken		
REVIEWED BY: NEJ			
EQUIPMENT USED: Peristalic Pui	mp + disposable po	lyethlylene hose; tefforbailer	withdisposable
PURGING DEVICE		LING DEVICE metals -> peristalic p	inp
Type Device? Peristalic Pump	,	Denicar texton briller for vocs,	' 1
How was the device decontaminated? 50	1 1 1	ree the device deconteminated? Pokuble+allono.	x-paplok->
How was the line decontaminated?	losbook Howw	pe the line decontaminated? disposable new cord used each	methanul; aidry
Which well was previously purged?		well was previously sampled? PSMW4G	104
INITIAL WELL VOLUME	PURGI	ING 2114	
Well diameter (In.)	# Time •	started 1548 Finished 140	4
Stickup (m.) ~ 2	Volum	• purged 7 gallons	
Depth to bottom of well (n.) BIOC		ents on Well Recovery Mrc	
Depth to water surface (ft.) BTDC	6.32		
Langth of water (ft.)		onal Comments	
Volume of water (ft3)	0.2		
(gal.)	1.5		
Amount of sediment at bottom of well (ft.)	NM Sampl	Collected: Start 1404	
LNAPL (TL) M DNAPL (H.)	NM	1410 Gample Start 1416	
IN-SITU TESTING Date: 8 4/93	8/23/13 3/23/13	थ्यातः अव्यक्त	
Water Level of BTX 6.57	6.67 6.68	1403 1668 6,65	
Well Volume Purged (gal.)	2 4	6 7	
Turbidity Char	clear clar	Osa~ Turbid	
Odor Wire	work have	have how	
Organic Vapor (ppm) NM	An An	MA . M	
pH (unite) 7.28	6.70 6.93	696 7.13	
Conductivity (µ mho=) H8	712 707	687 688	
Water Temperature (*2) 0F 70.8	68.7 <u>4.9</u>	185 68.3	
Notes: 1 ft. length of 4*	■ 0.067 ft ³ or 0.65 gaL	1 ft. length 2" = 0.022 ft ³ or 0.16 gal	

clear, lurbid, opaque

NN = Not Measured

BTOX = Below Top & (Outer Steel) (asing)

#55/29/13

Turbidity enoices:

Revision Date: 2-8-91

GROUNDWATER S.	Sample ID: P5MW6GW4
PROJECT NAME Phelps Collins RI	JOB NO: 931800-12 DATE: 8/29/93
WELL NO. MWb LOCATION Sik 5	
WEATHER CONDITIONS Clarify Ground don't	AMBIENT TEMP: 70 °F
PERSONNEL M. Striker & 1 Smi	th
REVIEWED BY: DET	
EQUIPMENTUSED: Peristalic Pump + disposa	ble polyethylene hose; teflorbaijes with disposable
PURGING DEVICE	SAMPLING DEVICEMENTALS -> peristalic pump
Type Device? Peristalic Pump	Type Device? <u>Hellon Miller for VOCS, SVOCS, TRH</u>
How was the device decontaminated? See logbook	How was the device decontaminated? Dotuble + allonox -> astable >
How was the line decontaminated? See log book	DI water - methanol; airdry How was the line decontaminated? disposable newnylon Cord used each time
Which well was previously purged? 5145 MW7	Which well was previously sampled? PSIU 137 GWY
INITIAL WELL VOLUME	PURQING
Well diameter (in.)	Time started 1519 Finlaned 1535
Stickup (ft.)	Volume purged 7 gallons
Depth to bottom of well (ft.) BIOC 15.5	Comments on Well Recovery
Depth to water surface (ft.) 8TW 6.36	
Length of water (ft.)	Additional Comments MUNC
Volume of water (ft3)	
(gal.)	
Amount of sediment at bottom of well (it.)	Samples Collected: Start
LNAPL (ft.)	1540 Finish1546
IN-SITU TESTING Date: 21393	
	30 1535 1546
	91 6.83 6.80
Well Volume Purged (gal.)	
	None None
1	NON NON
	7,58 7.60 7,62
Conductivity (u mhos) 308 344 3	357 360 374
Water Temperature (%) 05 685 65.9 65	5 65.6 65.7
Notes: 1 ft. length of 4" # 0.087 ft. or 0.65 gr	aL 1 ft. length 2° = 0.022 ft ³ or 0.16 gal

NM = Not Measured

G-65

clear, turbid, opaque

BTOX = Below Top of (Dotor Steel) Casing HSS/26/3

Turbidity choices:

Revision Date: 2-6-91

E the Cart Rechresory GR	OUNDWATER !	SAMPLING	Sample ID	: PSMW	74124
PROJECT NAME Phelps	Collins RI	JOB NO: 93		DATE: 8/29	
WELL NO. MUT	LOCATION SIK				
WEATHER CONDITIONS (LI	non precioling	AMBIENT TEMP:	70	of	
PERSONNEL	hen + 15 mith	<u></u>			
REVIEWED BY PHO					
EQUIPMENT USED: Perist	talic Pump + dispo	suble polyethly	ylene hose,	teflor baile	en withdispose
PURGING DEVICE		SAMPLING DEVI	sermetals.	-> peristalic	aurp
Type Device? Peristalic	Pump	1		ver for voc	
How was the device decontamina	sted See logbook	How was the dev	tce decontaminate	or potable + allo	nox-7 Outstok -
How was the line decontaminate	or Sulogbook			disposable new ford used ex	methanit, an
Which well was previously purge	Chenne		reviously sampled		SGW4
INITIAL WELL VOLUME		PURQING			
Well diameter (in.)	<i>ð</i> "	Time started	1429	Finished 14	44
Stickup (ft.)	^2′	Volume purged		7 gallon	5
Depth to bottom of well (ft.) BIC(15.5	Comments on W	ell Recovery	nine	
Depth to water surface (ft.) BTX	7.24				
Length of water (n.)	8.26	Additional Comm	ients	mo	
Volume of water (#13)	0.18				
(gal.)	1.3				
Amount of sediment at bottom of well (ft.)	NM	Samples Collect	ed: Start	1444	
LNAPL (IL) NA	DNAPL (M.)NM	140	Finish	1456	
IN-SITU TESTING Date:	8 /4/93 8/2873	9/9/3 Yak	3 8/29/4	}	
Time:	1429 1435	1440 1444	1456		·
Water Level of BTX	7.33 7.3H	<u>1.36</u> <u>7.36</u>	NM		
Well Volume Purged (gal.)	0 2	4 6			· ·
Turbidity	clear clear	<u>C/0000</u> <u>C/000</u>			
Odar	none word	over Non			
Organic Vapor (ppm)	NM AM 1.20 6.95	Alan An		*************	
pH (units)	$\frac{7.20}{154}$ $\frac{6.13}{171}$.	<u> 7.05</u> <u> 7.00</u>	349		
Conductivity (# mhos) Water Temperature (**)	669 4.7	184 194 65.6 65.6	<u> </u>		
Water Town and Dr					

Turbidity choices:

NN = Not Measured

PVC G-66

BTOX = Below Top & (Dutor steet) (asing HS 1/29/9)

cieer, turbid, opeque

FIGURE 3-2

Revision Date: 2-8-91

=	The Earth Technology	
	Corporations	

GROUNDWATER SAMPLING

PROJECT NAME Phelps Cillins ANG	JOB NO: DATE: 9/13/99			
	JOB NO: DATE:			
WELL NO. MW8 LOCATION Sta 5	2nd FTA			
WEATHER CONDITIONS WINDLY Suntry	AMBIENT TEMP: ~18°C			
PERSONNEL PHLAY + BFN				
REVIEWED BY:				
EQUIPMENT USED: Punp, Bailer, hose Rope,	Filter			
PURGING DEVICE	SAMPLING DEVICE .			
Type Device? Phup	Type Device? Bailer			
How was the device decontaminated? See logbach	How was the device decontaminated? See lackook			
How was the line decontaminated? dedicated	How was the line decontaminated? <u>Ded.c.J.J</u>			
Which well was previously purged? P3mw7	Which well was previously sampled? P3 mus?			
INITIAL WELL VOLUME	PURGING			
Well diameter (in.)	Time started 1114 Finished 1200			
Stickup (ft.)	· Volume purged ., 17			
Depth to bottom of well (ft.)	Comments on Well Recovery Innedut			
Depth to water surface (ft.)				
Length of water (ft.)	Additional Comments			
Volume of water (ft3)				
(gal.) 2.3%				
Amount of sediment at bottom of well (ft.)	Samples Collected: Start 1205			
LNAPL (ft.) DNAPL (ft.)	Finish 1220			
IN-SITU TESTING Date: 913/93				
Time: 1119 1129 163	35 1145 1200			
Water Level 7,1 7.33	7.33			
Well Volume Purged (gal.) Initia 3				
Turbidity YEAR SI, SI				
odor none none non	J NON SI.			
Organic Vapor (ppm)				
pH (unit●) <u>9.44 9.3</u>	38 10.02 Suloghort			
Conductivity (# mhos) Water Temperature (*C) W(6.5) 66	27 68.5 62.4			
Notes: 1 ft. length of 4° = 0.087 ft ³ or 0.65 gal				
Turbidity choices: clear, turbid, opaque TETC154	Revision Date: 2-8-91			

=	The Earth Technology	
	Coverage actions	

GROUNDWATER SAMPLING -

and Corporation Corporation	Sample ID: PSmw96w4
PROJECT NAME Phelps Collins ANG PET	
WELL NO. MYLL 9 LOCATION STE 8	
WEATHER CONDITIONS Hot,	AMBIENT TEMP: 75°T
PERSONNEL PHC + DEJ	
REVIEWED BY: DEJ	
EQUIPMENT USED:	
PURGING DEVICE	SAMPLING DEVICE
Type Device? Bailer	Type Device? Baler
How was the device decontaminated? Sectoshook	How was the device decontaminated? Dedicated from
How was the line decontaminated? <u>dedicated</u>	How was the line decontaminated? dedicatel
Which well was previously purged? PSmus	Which well was previously sampled?
	The state of the s
INITIAL WELL VOLUME	PURGING
Well diameter (in.)	Time started 1114 Finished 1154
Silckup (ft.)	Volume purged ., 1
Depth to bottom of well (ft.)	Comments on Well Recovery Immedial
Depth to water surface (ft.)	
Length of water (ft.)	Additional Comments
Volume of water (tt3) ,	
(gmi.) Z.	
Amount of sediment at bottom of well (ft.)	Samples Collected: Start 1550
LNAPL (ft.)	Finish 1600
IN-SITU TESTING Date: 9/14/19 9/14/2	9/14/93
Time: 1140 1145	1156
Water Level	
	10 -
Turbidity Sl Sl	<u> </u>
Odor <u>\$_</u> <u>\$\</u>	<u> </u>
Organic Vapor (ppm) — — — — — — — — — — — — — — — — — — —	
S 2. 1 - 1	Localibrate PH/cond.
Contractivity (2 intros)	103.2
Not ••: 1 ft. length of 4° = 0.087 m ³ or 0.6 Turbidity choices: clear, turbid, op	
in sich, shoreta, crear, tarbia, op	Mediatou nata: 7-9-81

The Earth Technology

GROUNDWATER SAMPLING

Carparation				15	ample ID:	roce GTAC	01
PROJECT NAME Phelos Collins RI JOB NO: 93/800-12 DATE: 8-11-93							
WELL NO. MWI	LOCATIO	on site	617				
WEATHER CONDITIONS				т темр: ~	82°F		
PERSONNEL PHLCL							
REVIEWED BY: 15 BM							
EQUIPMENTUSED: peristaltic pump, bailer, dedicated rope							
EQUIPMENT USED: PETER	ithe pur	mp, pau	us, de	diceted	rope		
PURGING DEVICE			1	ING DEVICE			
Type Device? GEO pun	p Z		_ Type D	evice? Pun	p Baile		
How was the device decontamin	ated? See	losbook	_ How w	as the device d	econtaminated	r Seelogbe	er_
How was the line decontaminate	1_	hicated_		es the line deco	ontaminated?	ded, cash	ed_
Which well was previously purged? POUGMW? Which well was previously sampled?							
INITIAL WELL VOLUME PURGING 1900							
Weil dlameter (in.) 2''			Time =	Heres benes	AD FI	nished 19	55
Stickup (ft.) Z				Volume purged 11gds.			
Depth to bottom of well (ft.)	36	US BTOC	_ Comm	Comments on Well Recovery Immediate			
Depth to water surface (fL)	18.	59 BTOC					
Length of water (ft.)	17	.46	Additio	onal Comments			
Volume of water (#3)	~ 2.	8	-				
(gal.)			_		_	2006	
Amount of sediment at bottom of well (ft.)			- Sampi	⊶ Collected:	-		
LNAPL (ft.)	DNAPL (ft.)		_			2028-	
IN-SITU TESTING Date:		8-11-43	8-11-43		8-11-43		
Time:	1900 PAL:	1921	1851	1940	1950	<u>2006</u>	
	1 1458	0 ~		7.0		18.62	
Well Volume Purged (gal.)	-0-	2.5	_5	7.5	10	hotel	
Turbidity	<u></u>		1500	NONC.	none	none	
Odor	Nove	16AE.	-O-	NOWL	- O.	10-	
Organic Vapor (ppm)	<u>-0-</u> 10.52	9.44	9.18	9.43	9.16	9.26	
pH (unite)	182	203	23.3	235	243	241	
Conductivity (µ mhos) Water Temperature (*C)	(00.2	58.1	58.1	57.5	57.9	57.8	
		= 0.087 ft ³ or 0		1 ft leagth	2° = 0.022 π ³ c	or 0.16 gai	
Notes: 1 ft, length of Turbidity chi		= 0.087 n or 0		•	vision Date:		
1							

E the Carth Technology GF	ROUND	WATER	SAMP	ING s	ample ID:	Pob6mu	wZ_
PROJECTNAME Phelps	Collins		ON BOL	: 931800	0-12 0	ATE: 8-11.	-73
WELL NO. MWZ	LOCATIO	ON Site	6 6				
WEATHER CONDITIONS Na	zy hu	id over	1 93 u.s.T. AMBIEN	TTEMP: 7	7-85° \$		
PERSONNEL PH Lay	and n	ME. Stok	&-C				
REVIEWED BY 15 Proces	yel 91	21 93					
EQUIPMENT USED: Purp	, hose,	Barber.	pupas	sembly			
PURGING DEVICE			SAMP	ING DEVICE	•		
Type Device?	Fro punz	2	_ Тур• 0	evice? Ba	ler/Pu	up	
How was the device decontamin	nated? Soel	subook	_ How w	as the device d	ocontaminated	7 See log	book
How was the line decontaminate	od? <u>clec</u>	licated	_ How w	ee the line deco	ontaminated?	ded, ca	ted
Which well was previously purg	ed7 P04	gmwz	_ Which	well was previo	usly sampled?	BOYGMI	٧٢
INITIAL WELL VOLUME			PURGI	ИО	· · · · · · · · · · · · · · · · · · ·		
Well diameter (in.) 2''			_ Time =	tened 150	40_ FI	nished 16	OSO
Stickup (ft.) 2'			_ Volum	Volume purged 12 cal			
Depth to bottom of well (ft.)	28.	2' BTOC	Comm	Comments on Well Recovery Immediat			
Depth to water surface (ft.)	12.5	59' BTOC	_				
Langth of water (ff.)	_15.	61	_ AddRid	onal Comments			
Volume of water (ft3)			-				
(gai.)	~ 2.5	<u> </u>	_				
Amount of sediment at bottom of well (ft.)			Sampl	⇔ Collected:	Start _	1670	
LNAPL (TL.)	DNAPL (ft.)		_		Finish _	1629	
IN-SITU TESTING Date:	8-11-93	8:11-53	8:11-73	\$-11-83	8-11-73	8-11-9	3 8-11-93
Time:	1540	15:50	15:58	16:06	16:12	16:20	16:29
Water Level	12.59						17.62
Well Volume Purged (gal.)	<u>- 0 - </u>	2	4	_6_	8	10	Final ~ 1
Turbidity	sl tonone	_5/_		<u> 5)</u>	_5/_	5/	5/
Odar	none	None	Nova	مريح	Novo.	None	-0-
Organic Vapor (ppm)	11.87	7.84	5.12	-0-	952	<u>-0`</u>	8.54
pH (unite)	278	209	294	314	8.52 301	8.59	308
Conductivity (µ mhos) Water Temperature (*C)	76.8	62.6	59.6	57.5	59.9	59.6	<u>59.8</u>
Notœ: 1 ft. length o	1 4*	■ 0.087 m ³ or 0.	.65 gaL		z* = 0.0zz n ³ o	r 0.16 gal	
Turbidity cho		clear, turbid, o			ision Date: 2	_	

E The Corn Technology GRO	DUNDWATER SA	Sample ID: P6 MW36W4
PROJECT NAME Pholos	Collins Rl	JOB NO: 931800-12 DATE: 8/76/93
WELL NO. MW3	LOCATION Sik 6	1_
WEATHER CONDITIONS P. C. O.	ody humid calm	** AMBIENT TEMP: ~ 80 0F
1	no P. Lay	
REVIEWED BY: JSAme		
EQUIPMENT USED: Perist	UIC Pump + disposa	ble polyethlylene hose; teflanbailes withdisposable
PURGING DEVICE		SAMPLING DEVICETMETALS -> peristalic pump
Type Device? Peristalic	Pump	Type Device? <u>teffor miler for VOCS, SVOCS, TPH</u>
How was the device decontamina	1007 See logbook	How was the device decontaminated? Potable allonox -7 artible -2 DI water -> methanut; aidry
How was the line decontaminated	7 See logbook	How was the line decontaminated? disposable newnylon cord used each time
Which well was previously purged	17 SIR3 MW5	Which well was previously sampled? D3MW5 GW4 + P3MW9 GW4
INITIAL WELL VOLUME		PURGING
Weil diameter (In.)	2"	Time started 1331 Finished 1421
Stickup (ft.)	29 9 5 JHSS124	Volume purged 14 gallon S
Depth to bottom of well (ft.) BICC		Comments on Well Recovery
Depth to water surface (ft.) BTDC		
Langth of water (ft.)	24.49	Additional Comments pH Weter is all thing pH
Volume of water (ft3)	70.54	redunganesispert.
(gal.)	3.°17	
Amount of sediment at bottom of well (ft.)	NM	Semples Collected: Start 1477
LNAPL (ML) NA	DNAPL (H.) NM	Hydro landes Finish 1932
IN-SITU TESTING Date:	8/93 -	
Time:	1001	400 1416 1421 1432 ·
Water Level of BTOX	13.11	16.06 16.09 15.66 NM
Well Volume Purged (gal.)	<u> </u>	1 12
Turbidity	ilea Oleta _	Clear dra De Clear
Odor	None None	No No 35 NW
Organic Vapor (ppm) PH (units) 7.66		956 10.40 215 19811.69
Conductivity (µ mho=)	349 294	3.02 1117 396
Water Temperature (* 2) 0F	76.3 67.	599 65.2 59.5
Notes: 1 ft. length of	4" • 0.087 m ³ or 0.65	gaL 1 ft_length 2" = 0.022 ft ³ or 0.16 gal

NM = Not Measured

BTOC = Below Top & (Outer steel) (asing

39

NM = Not Measured

Odor

pH (units)

Organic Vapor (ppm)

Conductivity (µ mnos)

Water Temperature (")

G-72

• 0.087 m³ or 0.65 gal

clear, turbid, opaque

N mo

BTOC = Below Top of (Outer skel) (asing

nure

21

8.49

60.4

371

1 ft. length of 4°

Turbidity choices:

NEW



NA

1 ft. length 2" = 0.022 ft³ or 0.16 gal

Revision Date: 2-8-91

7,92

384

931800-12

Which well was previously sampled?

Volume purged

0816

JOB NO:

Sample ID: P6MUSG

SAMPLING DEVICEmetals -> peristulic pump

tellon briller for VOCS, SVOCS, TIPH

Iminute

FIGURE 3-2

How was the device deconteminated Potuble + allonox - potuble ->
DI water -> methan of; airdy

was the line decontaminated? disposable newnylon cord used each time was previously sampled? PSMUGGUY

	Depth to bottom of well (ft.) BIC (Depth to water surface (ft.)		Comments on Well Recover	
	Depth to water surface (ft.) BIOC. Length of water (ft.)	9.18	Additional Comments _	none
1.53	Volume of water (ft3) (gal.)	0.2		
4.8	Amount of sediment at bottom of well (ft.) UNAPL (ft.) WM	NM DHAPL (H.) NM	PUT Sample	tert
	M-SITU TESTING Date: Time:	8/2/93 0815 0821	1661	852
	Water Level A BTX	11.20 11.22	11.26 11.26 10	D.92

Э

clair

Novo

ALA

7.76

0

Clear

None

NM

7.54

232

65.5

1 ft. length of 4"

Turbidity choices:

GROUNDWATER SAMPLING

2/21/13

Ste 5 MWG

Pump + disposable polyeth

WEATHER CONDITIONS MOUNTY, Slightly breeze

15 Brugel

Peristalic. mylon Cord

How was the line decontaminated?

INITIAL WELL VOLUME

Well Volume Purged (gal.)

Organic Vapor (ppm)

Conductivity (u mhos)

Water Temperature (2) 0F

NM = Not Measured

Turbidity

pH (units)

Well diameter (in.)

Stickup (ft.)

clear, turbid, opaque

clem

POK

arx - Belin Took (Autor Stee

clean

non

1 ft, length 2" = 0.022 ft or 0.16 gal

Revision Date: 2-8-91

139

	GROUNDWATER:	SAMPLING Sample ID: P6MW6GW4	
:	PROJECT NAME Phelas Collins RI	JOB NO: 931800-12 DATE: 8/30/93	
	WELL NO. WWW LOCATION SIK		
	WEATHER CONDITIONS Cloudy dvizdin hov		
		M Stokes	
	REVIEWED BY 15 Priegel 9/21/93		
	EQUIPMENT USED: Peristalic Pump + dispo	osable polyethylene hose; teflorbailer withdi	iposabl
	PURGING DEVICE	SAMPLING DEVICEMENTALS -> peristalic pump	
	Type Device? Peristalic Pump	_ type Device? <u>tellon miler for VOCS, SVOCS, TPH</u>	4
	How was the device decontaminated? Se logbook	How was the device decontaminated? Dotuble + allonox -7 mb.b.	k >
	How was the line decontaminated? See log book	DT West of marks and	andr
	Which well was previously purged? Site 6 Mu4	Which well was previously sampled? P6 MW 4GW4	_
	INITIAL WELL VOLUME	PURGING	
	Well diameter (in.)	Time started 1134 Finished 12/5	
	Silckup (ft.)		
	Depth to bottom of well (ft.) BTOC 34, 90	Comments on Well Recovery 11/12	
	Depth to water surface (ft.) BTDC		
	Langth of water (ft.)	Additional Comments WM	
,	Volume of water (f13)	_	
"گو	(gal.)		
	Amount of sediment at bottom of well (ft.)	Samples Collected: Start (25	
	LNAPL (ft.)	1915 Finish 1929	
	IN-SITU TESTING Date: 8 3493		
		1158 1205 1210 1215 1229	4/4
		17.60 17.61 17.61 17.61	BUNK
		1 6 8 N8 4 30/13 - 1/gr	<u></u>
		none wire more word home	
	Organic Vapor (ppm) NM NM	NH NA NM NM NM	
	pH (unite)		
	Conductivity (# mnos) 442 419	419 438 445 434 425	-
	Water Temperature (2) 0F 61.3 55.2	56.3 56.7 551, 55.8 55.5	
	Notes: 1 ft. length of 4" • 0.057 ft ³ or 0.6:		
	Turbidity enoices: clear, turbid, op	opaque Revision Date: 2-8-91	

4 pH meter is broken. FIGURE 3-2

NN= Not Measured G-74

BTOX = Below Top & (Outer Steel) Casing

GROUNDWATER SAMPLING Sample ID: Plemw86 W4 The Earth Technology
Corporation JOB NO: 931800-12 DATE: 98/93 PROJECT NAME Pholps Collins ANG RIT WELL NO. MWE LOCATION SITE G dd Land Fill WEATHER CONDITIONS C.6(. PERSONNEL PALLEY and BENDETON REVIEWED BY ISTMESEL 9(21/93 EQUIPMENTUSED: Bailer, pump assendy, filter SAMPLING DEVICE PURGING DEVICE Type Device? Bailer Type Device? Baile How was the device decontaminated? See lock sok How was the device decontaminated? See lockook How was the line decontaminated? How was the line decontaminated? Which well was previously sampled? Pamwy Pamwy Which well was previously purged? PURGING INITIAL WELL VOLUME Time started 1313 Finished 1324 Well diameter (in.) Stickup (ft.) 15 BTOC Comments on Well Recovery Slow Depth to bottom of well (ft.) 11.89 BTOC Depth to water surface (ft.) 3.11 Additional Comments Length of water (ft.) 0.068 Volume of water (ft3) 0.5 (gal.) 1410 Samples Collected:

Amount of sediment at bottom of well (ft.)	DNAPL (ft.)		-		Finish _	1420	
LNAPL (ft.)		alcien	0/0/03	919193	918/93	9/4/93	
IN-SITU TESTING Date:	9(8/93	9/8/57	9/8/93				
Time:	1313	1316	1320	1322	1324	1420	
Water Lavel	11.89					11.88	
Well Volume Purged (gai.)		1gel	2_	2.5	3		
Turbidity	VRS	VRL	VLL	VR	mod	mod	
Odar	<u>SI.</u>	Sl.	SI	<u>SI.</u>	mod.	mod	
Organic Vapor (ppm)							
pH (units)	6.81	6.97	6.94	7.16	7.10	7.06	
Canductivity (µ mhos)	343	446	493	467	<u>S15</u>	486	
Water Temperature (°C)	64.4	608	60.7	60.2	59.5	6.04	
Not ⇔: 1 ft. length (of 4°	■ 0.087 n ³ or	0.65 gaL	1 ft, length	2° = 0.022 11 ³	or 0.16 gai	

Revision Date: 2-8-91

TETC154

Turbidity choices:

clear, turbid, opeque

The Earth Technology
Corporation

GROUNDWATER SAMPLING

Corporation			Sample ID	: Plemma GW4			
PROJECT NAME PhelpsC	olins and RI	JOB NO: <u>93</u>	1800-12	DATE: 1/8/93			
WELL NO. MW9	LOCATION SITE	6 Londfil					
WEATHER CONDITIONS Sum	-my	_ AMBIENT TEMP:	~70				
PERSONNEL PH Lay a	0						
REVIEWED BY: US (mege							
EQUIPMENT USED: Bailer	, pump assembly,	rilter					
PURGING DEVICE		SAMPLING DEV	ICE .				
Type Device? Bailer		Type Device? _	Baller				
How was the device decontamina	sted? See loshook	_ How was the day	vice decontaminate	or Sec logispole			
How was the line decontaminated	17 dedicated	_ How was the line	e decontaminated?	dedicated			
Which well was previously purged	d? Plemwe	_ Which well was	previously sampled	17 Pamus			
INITIAL WELL VOLUME		PURGING					
Well diameter (In.) 2 ⁿ	·	_ Denstanted _	Time started 1330 Finished 1347				
Stickup (ft.)		_ Volume purged	Volume purged . 3.5				
Depth to bottom of well (ft.)	14.8 BTOC	_ Comments on W	Comments on Well Recovery Slow				
Depth to water surface (ft.)	10.7° BTOC						
Length of water (ft.)	4.01	Additional Comm	ments				
Volume of water (ft3)	0.088						
(gal.)	0.65						
Amount of sediment at bottom of well (ft.)		Samples Collect	ed: Start .	1940			
LNAPL (ft.)	DNAPL (H.)	-	Finish	1450			
IN-SITU TESTING Date:	9/8/93	9/8/93 9/8/9	3 5/8/93	9/8/93			
Time: -	1334	1357 1340	1342	1450			
Water Level	16.75'			10.79			
Well Volume Purged (gal.)		2 3	3.5				
Turbidity	51. mod	mod mod	- bod	mod			
Odar							
Organic Vapor (ppm)							
pH (units)	7.27 7.45	7.51 7.59		7.49			
Conductivity (µ mhos)	447 465	485 459	,	412			
Water Temperature (°C)	59.6 58.4	57.3 57.8	57.2	57.8			
Notes: 1 ft. length of 4			ngth 2° = 0.022 ft ³	or 0.16 gal			
Turbidity choic	ces: clear, turbid, c	paque	Revision Date:	2-8-91			

PROJECT NAME Photos Collins ANGRT JOB NO: 93150-12 DATE: 91513 WELL NO. MUND LOCATION Str. (of F WEATHER CONDITIONS Coo winds WEATHER CONDITIONS Coo winds REVIEWED BY. SCOTT REVIEWED BY. SAMPLING DEVICE Type Device? Dailer Now was the device decontaminated? Properties How was the direct decontaminated? Properties How was the direct decontaminated? Properties How was the direct decontaminated? Properties How was the direct decontaminated? Properties How was the direct decontaminated? Properties How was the direct decontaminated? Properties How was the direct decontaminated? Properties How was the direct decontaminated? Properties How was the direct decontaminated? Properties How was the direct decontaminated? Properties How was the direct decontaminated? Properties How was the direct decontaminated? Properties How was the direct decontaminated? Properties How was the direct decontaminated? Properties How was the direct decontaminated? Properties How was the direct decontaminated? Properties How was the device decontaminated? Properties How was the direct decontaminated? Properties How was the direct decontaminated? Properties How was the direct decontaminated? Properties How was the divice decontaminated? Properties How was the divice dec	The Earth Technology GROUNDWATER	Campions
EQUIPMENT USED: Belief PURGING DEVICE Type Device? Belief How was the device decontaminated? Selection of the device decontaminated? Selection of the device decontaminated? Device of the was the line decontaminated? Device of the was the	WELL NO. MWIO LOCATION Site. WEATHER CONDITIONS Coo' winds PERSONNEL PHLONE FDFT	COFF AMBIENT TEMP: 68F
PURGING DEVICE Type Device? Baller How was the device decontaminated? Selection of the device decontaminated? Selection of the device decontaminated? How was the device decontaminated? How was the line decontaminated? Line how was the line decontaminated? Line how was the line decontaminated? Li	7)	
INITIAL WELL VOLUME Well diameter (in.) 2" Stickup (ft.) -2' Depth to bottom of well (ft.) 15 Depth to water surface (ft.) 1/ Length of water (ft.) 4' Volume of water (ft.) 0.088 Volume of water (ft.) 0.088 Amount of sediment at bottom of well (ft.) 10 LNAPL (ft.) - 0NAPL (ft.) - 9/10/93 Finish 0730 IN-SITU TESTING Date: 3/15/13 9/15/13 9/15/15 Water Level 4' - 4/2' Well Volume Purged (gal.) 0.2.5 Turbidity 5 March 4 5 6 6 1 5 1 5 1 6 1 6 1 6 1 6 1 6 1 6 1	PURGING DEVICE Type Device? Baller How was the device decontaminated? Sedanhark How was the line decontaminated?	Type Device? Bailer How was the device decontaminated? Alcohor+DI, DI Runsu How was the line decontaminated? deducated
Amount of sediment at bottom of well (ft.) LNAPL (ft.) DNAPL (ft.)	INITIAL WELL VOLUME Well diameter (in.) 2" Stickup (ft.) -2' Depth to bottom of well (ft.) 15 Depth to water surface (ft.) 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Time started 7025 Finished 2048 Volume purged 5591/5 Comments on Well Recovery — modurate.
IN-SITU TESTING Date: 1/15/13 4/5/13 9/15/03 Time: 2025 2635 2048 Water Level 4/	Amount of sediment at bottom of well (ft.)	4 / 4
Water Lavei Well Volume Purged (gal.) Turbidity Odor Organic Vapor (ppm) pH (units) Conductivity (µ mhos) 2.5 Macl Viu Signature Viu Andesical Definition PH and band	IN-SITU TESTING Date: 3(15/13 415/13 Time: 2025 2635	2048
Organic Vapor (ppm) pH (units) Conductivity (u mhos)	7 2 6	5
pH (units) Conductivity (µ mhos) DH and cond DH and cond	Odor hidesical	V 144
Water Temperature (°C) (4.4 (4.8 (4.1)	pH (units) Conductivity (µ mhos) Lung ble to o	Celibrate

TETC154

Notes:

1 ft, length of 4°

Turbidity choices:

clear, turbid, opaque

Revision Date: 2-8-91

PROJECT NAME PHUDS COLLING RT JOB NO: 93, 200-12 DATE: 9-15-3 WELL NO. MUST LOCATION STATE 8 dd Harser 9 WEATHER GONDITIONS CHO CLOWDLY AMBIENT TEMP: ~70° F PERSONNEL PHUM YMS STOKES REVIEWED BY PT EQUIPMENT USED? PULL LOSS BOLLET ROOK SAMPLING DEVICE Type Device? Pull Loss Pull Loss Bollet Rook SAMPLING DEVICE Type Device? Pull Loss Pull Loss Bollet Rook SAMPLING DEVICE Type Device? Pull Loss Pull Loss Bollet Rook SAMPLING DEVICE Type Device? Pull Loss Bollet Rook SAMPLING DEVICE Type Device? Pull Loss Bollet Rook SAMPLING DEVICE Type Device? Pull Loss Bollet Rook SAMPLING DEVICE Type Device? Pull Loss Bollet Rook SAMPLING DEVICE Type Device? Pull Loss Bollet Rook SAMPLING DEVICE Type Device? Pull Loss Bollet Rook SAMPLING DEVICE Type Device? Pull Loss Bollet Rook SAMPLING DEVICE Type Device? Pull Loss Bollet Rook SAMPLING DEVICE Type Device? Pull Loss Bollet Rook SAMPLING DEVICE Type Device? Pull Loss Bollet Rook SAMPLING DEVICE Type Device? Pull Loss Bollet Rook SAMPLING DEVICE Type Device? Pull Loss Bollet Rook SAMPLING DEVICE Type Device? Pull Loss Bollet Rook SAMPLING DEVICE Type Device? Pull Coll Loss Bollet Rook SAMPLING DEVICE Type Device? Pull Coll Loss Bollet Rook SAMPLING DEVICE Type Device? Pull Coll Loss Bollet Rook SAMPLING DEVICE Type Device? Pull Coll Loss Bollet Rook SAMPLING DEVICE Type Device? Pull Coll Loss Bollet Rook SAMPLING DEVICE Type Device? Pull Coll Loss Bollet Rook SAMPLING DEVICE Type Device? Pull Coll Loss Bollet Rook SAMPLING DEVICE Type Device? Pull Coll Loss Bollet Rook SAMPLING DEVICE Type Device? Pull Coll Loss Bollet Rook SAMPLING DEVICE Type Device? Pull Coll Loss Bollet Rook SAMPLING DEVICE Type Device? Pull Coll Loss Bollet Rook SAMPLING DEVICE Type Device? Pull Coll Loss Bollet Rook SAMPLING DEVICE Type Device? Pull Coll Loss Bollet Rook SAMPLING DEVICE Type Device? Pull Coll Loss Bollet Rook SAMPLING DEVICE Type Device? Pull Coll Loss Bollet Rook SAMPLING DEVICE Type Device? Pull Coll Loss Bollet Rook SAMPLING DEVICE Type Device? P
WEATHER CONDITIONS CAS CLOUDED AMBIENT TEMP: ~70° F PERSONNEL PHLLE, MESTORES REVIEWED BY FIT EQUIPMENT USED? MAD AND BE INT ROCK S. HEC PURQING DEVICE Type Device? Part of the was the line decontaminated? School How was the device decontaminated? Decord How was the line decontaminated? Decord How was the line decontaminated? Decord How was the line decontaminated? Decord How was previously purged? P3 MW) Which well was previously purged? P3 MW) Which well was previously sampled? P3 MW)
PERSONNEL PHLAM, MESTORIA REVIEWED BY PT EQUIPMENT USED! Punp hosa, Bai Er Roge C. Her PURGING DEVICE Type Device? Fung How was the device decontaminated? See to both the was the device decontaminated? See to both the was the line decontaminated? Device Power
REVIEWED BY IFT EQUIPMENT USED: Purp Looks, Bailer, Rock C. Her PURGING DEVICE Type Device? Purp How was the device decontaminated? Set highway How was the device decontaminated? Set highway How was the line decontaminated? Set highway Which well was previously purged? Which well was previously purged? PURGING Time started 1042 Finlaned 1125 Stickup (Tt.) 2 Stickup (Tt.) 2 Stickup (Tt.) 44.7 Length of water surface (Tt.) 10.5 BTOC Comments on Well Recovery 10.00 at 11.00
REVIEWED BY IFT EQUIPMENT USED: Purp Looks, Bailer, Rock C. Her PURGING DEVICE Type Device? Purp How was the device decontaminated? Set highway How was the device decontaminated? Set highway How was the line decontaminated? Set highway Which well was previously purged? Which well was previously purged? PURGING Time started 1042 Finlaned 1125 Stickup (Tt.) 2 Stickup (Tt.) 2 Stickup (Tt.) 44.7 Length of water surface (Tt.) 10.5 BTOC Comments on Well Recovery 10.00 at 11.00
PURGING DEVICE Type Device? Part of the device decontaminated? See tochook How was the device decontaminated? See tochook How was the line decontaminated? See tochook Which well was previously purged? P3MW) INITIAL WELL VOLUME Well diameter (In.) 2 Stickup (It.) -0.3 Depth to bottom of well (It.) 10.5' BTOC Length of water surface (It.) 10.5' BTOC Length of water (It.) 10.5' BTOC Amount of sediment at bottom of well (It.) 10.5' BTOC UNAPL (It.)
Type Device? Fund Purpo How was the device decontaminated? Set belook How was the line decontaminated? Set belook How was the line decontaminated? Set belook Which well was previously purged? Which well was previously purged? Which well was previously sampled? P3 must Which well was previously sampled? P3 must Which well was previously sampled? P3 must Which well was previously sampled? P3 must PURGINO Time started 1042 Finished 1125 Volume purged 11 gals Volume purged 11 gals Comments on Well Recovery
How was the device decontaminated? Set to chock How was the iline decontaminated? deducated How was the line decontaminated? deducated Which well was previously purged? P3 MW) Which well was previously sampled? P3 MW) PURGING Time started[04] Z Finished
How was the line decontaminated? Which well was previously purged? Which well was previously sampled? Which well was previously sampled? Which well was previously sampled? P3 MW1 Which well was previously sampled? P3 MW1 Which well was previously sampled? P3 MW1 Which well was previously sampled? P3 MW1 Which well was previously sampled? P3 MW1 Time started[04]2
Which well was previously purged? \$3 mm\$ Which well was previously sampled? \$2 mm\$ Well diameter (in.) 2" Stickup (ft.) -0.3 Depth to bottom of well (ft.) 25 BTOC Depth to water surface (ft.) 10.5 BTOC Langth of water (ft.) (4.1) ** Additional Comments Additional Comments Volume of water (ft.) 0.3102 (gal.) -2.255 Amount of sediment at bottom of well (ft.) Samples Collected: Start 1/2 Cc LNAPL (ft.) DNAPL (ft.) LNAPL (ft.) Finish 1/4 Cc Water Level 10.9 Well Volume Purged (gal.) -0.2.5 Turbidity NSAS Dence
Well diameter (in.) 2" Time started 1042 Finished 1125
Weil diameter (in.) 2 Time started 1042 Finished 1126 Stickup (ft.) -0.3 Volume purged 1 Qal S Depth to bottom of weil (ft.) 10.5 870 Comments on Weil Recovery medicate Langth of water (ft.) 10.5 870 Additional Comments Volume of water (ft.) 10.5 870 Additional Comments Volume of water (ft.) Comments Start 1/2 2 Volume of water (ft.) Samples Collected: Start 1/2 2 Langth of water (ft.) DNAFL (ft.) Finish 1/4 4 UNAPL (ft.) DNAFL (ft.) Finish 1/4 4 UNAPL (ft.) DNAFL (ft.) Time: 1042 1057 1102 1110 1119 1140 Water Level 10.9 11.05 Weil Volume Purged (gal.) -0 2.5 5 7.5 10 -
Stickup (ft.)
Depth to bottom of well (ft.) 25 870 (
Depth to water surface (ft.) 10.9' 870 C 14.1
Langth of water (ft.) 24.1 Additional Comments
Volume of water (ft.)
Amount of sediment at bottom of well (ft.) Samples Collected: Start 1/26
Amount of sediment at bottom of well (ft.) LNAPL (ft.) — DNAPL (ft.) — DNAPL (ft.) — Finish 1146 IN-SITU TESTING Date: 8-15-93 5-15-33 8-15-93 8-15-93 8-15-93 Time: 1042 1052 1102 1110 1119 1146 Water Level 10.9 — 11.05* Well Volume Purged (gel.) — 0 · 2.5 5 7.5 10 — Turbidity None 0 - 0 - 0 - 0 - 0 - 0 - 0 - 0 - 0 - 0
Design of well (ft.)
UNAPL (PL)
N.SITU TESTING
Time: 1042 1052 1102 1110 1119 1140 Water Level 10.9 11.05 11.05
Well Volume Purged (gel.) -0. 2.5 5 7.5 10 - Turbidity None -000.
Turbidity none none .000-
TOTAL TIEST
0000 0000 0000 0000
Odar non -00' 10
Organic Vapor (ppm) - 0 - 0 - 0 - 0 - 0 - 0 - 0 - 0 - 0 -
pH (units) 8,08 8,05 7.85 7.89 7.83 7.84
Conductivity (µ mho=) 3-3 330 378 337 333 371
Water Temperature (°C) 63.1 61.2 51.8 60.2 60.1 60.3
Notes: 1 ft. length of 4" = 0.087 ft ³ or 0.65 gal. 1 ft. length 2" = 0.022 ft ³ or 0.16 gal
Turbidity choices: clear, turbid, opaque Revision Date: 2-8-91

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846	
+ 1	

Comparation G	ROUNL	WAIER	SAMP	LING E	Sample ID:	P8MWZ	29W4	Ì
PROJECT NAME Phelos	Collie	ns RI	JOB N	o: 9318	00-12	DATE: 8 19	193	
WELL NO. MWZ	LOCAT	ON Sike	8					
WEATHER CONDITIONS D.C	loudy cal	~, 1009	AMBIE	NT TEMP:	65	F		
PERSONNEL J. Sir	uth + F	2. Cay M	. Slake					
REVIEWED BY DRJ			•					
EQUIPMENT USED: Peris	stalic Pu	mp y disp	osable p	olyethlyle	ne hose;	teflorba	iles with a	ispose
PURGING DEVICE			SAME	LING DEVICE	metals -	> peristali	ic pump	
Type Device? Peristali	crump			•			Ws, SVXS, TI	ÞΗ
How was the device decontami	nated? Su	· logbook	_ How	was the device o	O lecontaminates	17 Potoble + al	conox 7 pot	bk=
How was the line decontaminat	ed? <u>Su</u>	logbook	Haw	was the line dec	ontaminated?	disposable n	-> methan	of air
Which well was previously pure	Jed? Site	g MW3	_ Whici	n well was previ		ord used PIMU	3Ghod	
INITIAL WELL VOLUME			PURC	IING			*	
Well diameter (in.)	2	"	_ Time	8180 Dennem	F	inished _C	850	
Sickup (ft.)	27		Volun	ne purged	C	gallo	ns	
Depth to bottom of well (ft.) BK	× = 3	32.0	Comm	nents on Well Re	covery A	ene		
Depth to water surface (ft.)	x	17.90						
Langth of water (ft.)		4.1	_ Addn	lonal Comments		ure		
Volume of water (#13)		2.31						i
(gai.)	2.3	3.5	_	V				
Amount of sediment at bottom of well (ft.)		NM		les Collected:	Start _	0850		
LNAPL (ft.) NA	DNAPL (ft.)	NM	- Sumple	900	Finish _	0904		
VIN-SITU TESTING Date:	8/19/93		1 ''			the contract of the contract o	<u> </u>	
Time:	0821	0831	0836	0844	0850	0904	•	
Water Level of BTOX	17.95	17.94	17.94	17.94	17.94	NW		
Well Volume Purged (gal.)	_0_	<u> </u>	4	6	8	9		
Turbidity	clear	Clear	cler	clear	clean	clear		
Odar	NM	none	MM	non	NM	nore		
Organic Vapor (ppm)	7.78	7.85	7.91	<u>NM</u> -	7.97	7.90		
pH (units) Conductivity (# mhos)	794	392	384	418	410	422		
Water Temperature (%) OF	60.7	548	54.8	54.4	54.6	55.6		
Há s∱4/23 Notes: 1 ft. length o	of 4*	= 0.087 n ³ or 0.	65 gal.	1 ft. length	2" = 0.022 n ³ c	r 0.16 gai		1
Turbidity ch		clear, turbid, o			delon Date:	-		

BTOC = Below Top & (Outry steet) (asing

_	= and the first GROU	INDWATER SA	MPLING S	ample ID: _ P8	MW34W4				
	PROJECT NAME Phelps Co.		ов но: <u>93180</u>	00-12 DATE:	8/29/93				
	WELL NO. MW 3	LOCATION Sik 8							
	WEATHER CONDITIONS PLOUDY	alm, dry	AMBIENT TEMP:	60°F					
\$	PERSONNEL 2003	1. Smith &	Mark Stol	(
	REVIEWED BY: DFJ								
	EQUIPMENT USED: Peristalia	EQUIPMENT USED: Peristalic Pump + disposable polyethlylene hose; teflonbailer withdix							
	PURGING DEVICE		SAMPLING DEVICETYMETALS -> peristalic pump						
	Type Device? Peristalic Pul	nρ	Type Device?	effonmiller f	or VOCS, SVOCS, TIPH				
	How was the device decontaminated?	Se logbook	How was the device de	acontaminated? Poto	ble+ allonox -> potable				
	How was the line decontaminated?	Selogbook	How was the fine deco	DI intaminated? disposa	water methanul; a				
	Which well was previously purged?	SIK8MWZ	Which well was previo	cord cover 100 P	ble newnylon ised each time. BMWZGW4				
	INITIAL WELL VOLUME		PURGING O	926 12/93					
	Well diameter (in.)	2"	Time started	GIG StS Finished	0948				
	Stickup (ft.)	~ 2'	Volume purged 8 gallons						
	Depth to bottom of well (ft.) BICC	32.0	Comments on Well Re	covery hims					
	Depth to water surface (fL) BTDC								
	Langth of water (ft.)	14.12	Additional Comments Mr. 2						
2.3	Volume of water (ft3)	0.31							
	(gal.)	2.3							
6.9gall	Amount of sediment at bottom of well (n.)	NM	Samples Collected:	Start	0948				
, , , , , ,	LHAPL (FL) N.M DNA	PL (ft.)	sample time_	Finish	002				
	IN-SITU TESTING Date: 9 19				>				
	time:		939 0945	0948	002				
	Water Level of BTX 17	91 17.91 17	1.91 17.91		<u>M</u>				
	Well Volume Purged (gal.)			7 8					
			un can		Ca-				
			no no		yhe				
			$\frac{M}{N}$ $\frac{NN}{216}$.	/	<u>)h</u>				
			40 <u>572</u>	7.65	18				
i			$\frac{75}{5.8}$ $\frac{572}{55.9}$	(1) =	<u>6.9</u>				
	18 c/4/73	58.1							
	Notes: 1 ft. length of 4 ^e	• 0.087 ft ³ or 0.65 ga		z* = 0.022 m ³ or 0.16 g	41				
. 1	Turbidity choic€:	clear, turbid, opaqu	Rev	talon Date: 2-8-91					

NN= Not Measured

PV (G-80

BTOX = Below Top of (Outer Steel) Casing Assign 193

= The Estate Decline legy GF	ROUNDWATER	R SAMPLING Blind Duplick P8 MW96W4 @ Sample ID: P8 MW4GW+ B
Photos	Callins RI	JOB NO: 931800-12 DATE: 8/29/93
PROJECT NAME Phelps	COLLINS	JOB NO: 15/000-15 DATE: 0/2///
WEATHER CONDITIONS P.C.	Judy, Calm, dry	AMBIENT TEMP: 700F
PERSONNEL JJmch	VP TAY M.	Stolo
REVIEWED BY: DFT		
EQUIPMENT USED: Peris	stalic Pump + dis	isposable polyethlylene hose; teflorbailes withdip
PURGING DEVICE		SAMPLING DEVICETMETALS -> peristalic pump
Type Device? Peristali	crump	Type Device? <u>teflon briller for VOCS, SVOCS, TPH</u>
How was the device decontami	naced? See logbook	How was the device decontaminated? Potuble + alconox -7 orb lok
How was the line decontaminat	See L. Jank	Y - Way was the line deconteminated? discosable newhylan
Which well was previously pur	C 10 8 M 43	Which well was previously sampled? FOMW3GWY
INITIAL WELL VOLUME		PURGING
Well diameter (in.)	∂"	Time started 1026 Finished 1/37
Stickup (ft.)	~2'	Volume purged 27 gallons
Depth to bottom of well (ft.) Bi	56.5	Comments on Well Recovery NAME
Depth to water surface (ft.) Bi	10.10	
Langth of water (ft.)	38.32	Additional Comments Wine
	option O:	8.0
Volume of water (ff3)	6.1	
(gai.)		1137
Amount of sediment at bottom of well (ft.)	somewit NM	Sample Collected: Start 137
LNAPL (ft.)	DNAPL (H.) NM	1140 Finteh 112
IN-SITU TESTING Date:		122
Time:		1052 1105 1121 1136 1157 16.24 1825 18.24 1824 18.A.O.H
Water Level of BTX	18.24 18.24	
Well Volume Purged (gal.)		
Turbidity		
Odar	NN NN	Now NW NW NW NW
Organic Vapor (ppm)	8.59 8.52	
pH (units)	337 320	318 321 319 321 323
Conductivity (u mhos) Water Temperature (**)	59.9 57.7	5011
ut e/4/13		3 or 0.55 cel 3.15. length 2° = 0.022 ft ³ or 0.16 cel

NM = Not Measured

G-81

BTOC = Below Top of (Outer skel) Casing

Revision Date: 2-8-91

The Earth Thehinology GF	ROUNDWATER S	AMPLING
		Sample ID: P8 mw5 6w4
PROJECT NAME Plays	Collins	JOB NO: 93/800-/7 DATE: 9/13/93
WELL NO. MW5	LOCATION SIYEB	1944
WEATHER CONDITIONS	aing	AMBIENT TEMP: ~55°F
PERSONNEL PHLAN	75-	
REVIEWED BY: DFJ		
EQUIPMENT USED: Baile	cope hand purp a	saubly, & Iter
PURGING DEVICE		SAMPLING DEVICE .
Type Device? Bailer		Type Device? Railer - See a brook
How was the device decontami	nated? See lochook	How was the device decontaminated? See lock and
How was the line decontaminat	1 1 1 1	How was the line decontaminated? dedicated
Which well was previously pure	P = - 0	Which well was previously sampled?
,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		million was previously sampled?
INITIAL WELL VOLUME		PURGING
Well diameter (In.)		Time started 1450 Finished 15/0
Stickup (ft.)		Volume purged
Depth to bottom of well (ft.)	_19.55	Comments on Well Recovery inned of
Depth to water surface (ff.)	11.38	
Length of water (ft.)	8.17	Additional Comments
Volume of water (ft3)	0.18	
(gal.)		
Amount of sediment at bottom of well (ft.)	_	Samples Collected: Start 1//2
LNAPL (ft.)	DNAPL (ft.)	9/14/93 Finish 1/30
IN-SITU TESTING Date:	913/93 9/13/83 9	1393 9/1493
Time:	()	516 4:10
Water Level	11.38	.40
Weil Volume Purged (gal.)	0 3.5	7
Turbidity	<u>sl</u> <u>sl</u> <u>s</u>	51
Odar	5 1	5/
Organic Vapor (ppm)		
pH (units)	unable to co	
Conductivity (µ mho=)	ph and Coros	
Water Temperature (*C)	<u>63.5</u> <u>64.7</u> <u>6</u>	<u>4.1 </u>
Notes: 1 ft length o	4.4.	1

Not**⇔**:

1 ft. length of 4*
Turbidity choices:

± 0.087 π³ or 0.65 gaL

clear, lurbid, opaque

1 ft. length $2^{\circ} \times 0.022 \, \mathrm{ft}^{\mathrm{J}}$ or 0.16 gai

Revision Date: 2-8-91 _

GROUNDWATE	Sample ID: P9 MW IGW4
PROJECT NAME Pholos Callins RI	JOB NO: 931800-12 DATE: 8/27/93
	lik 9
WEATHER CONDITIONS hot, numidison	
PERSONNEL P. Lay J.Sm.	
REVIEWED BY: DF Tayou	122/53
EQUIPMENT USED: Peristatic Pump 10	tisposable potyethlylene hose; teflorbailes withdisposable
PURGING DEVICE	SAMPLING DEVICE PRICES -> peristile ping-
Type Device? Terristatic Pomp Elland	saila Type Device? <u>tellon miller for VOCS, SVOCS, TIPH & Math</u>
How was the device decontaminated? Se logbox	How was the device decontaminated? Potable allonox - Potable -
How was the line decontaminated? See (05 000	DI water methanot, along
	How was the line decontaminated? disposable newnylon cord used each time. Which well was previously sampled? Pamwaguit
INITIAL WELL VOLUME	PURGING
Well diameter (In.)	Time started 1043 Finished 1057
Stickup (ft.)	Volume purged a gallons
Depth to bottom of well (ft.) BWC 31.85	Comments on Well Recovery Mark
Depth to water surface (ft.) 8TOC	
Langth of water (ft.) 13.31	Additional Comments DH well right is Milhir,
	TH readings are support
Volume of water (ff3)	
(gal.)	Samples Collected: Start 1530
Amount of sediment at bottom of well (ft.)	15/10
LNAPL (M.)	Finish
M-SITU TESTING Date: 8 793	7
Water Level of BTDC N/N N/N	
	Nn Nn NN 1853
Chan Make I	
Odor Nort Nort	
Maganic Vapor (ppm) O PM	NA
pH (unite) 7,84 8.81	8.90 9.40 9.14 4
Conductivity (# mnos) 488 4.5	
Water Temperature (12) 0F 63.9 60.8	58.4 5.89 78.6 58.7
JES 8/14/75	3

clear, turbid, opaque

NM = Not Measured

BTOX = Below Top & Outer stee Musing

	PROJECT NAME Phe 105 COllins	NATER SAMI	Sample	D: P9 MW\$ 4W 4	
	WELL NO NW 7 LOCATIO	0:1 9	но: <u>931800-12</u>	DATE: 8/27/93	
	WEATHER CONDITIONS hot humid		IIENT TEMP: ~80) O E	
		mith	- OC		
	REVIEWED BY DF Janley				1.
	EQUIPMENT USED: PORTSTALIC PORT	To Vaisposmont	potgethylene hose	, teflorbaises with	disposal
	PURGING DEVICE	tion sa	MPLING DEVICE PRICES		1
	Type Device? PENSTATIC PUMP	1	· ·	wiler for vocs, svocs,	TPH_
	How was the device decontaminated?	logbook Ho	0	11 mater Haminging As	blok->
	How was the line decontaminated?	osboot Ho	w was the line decontaminated	DI water - metha andisposable newnylon cord used each time	nul; aid
	Which well was previously purged? Sike	9 MWS W	ich well was previously sampi	cord used each tim	4
	INITIAL WELL VOLUME	PUI	RQING	111111111111111111111111111111111111111	\dashv
	Well diameter (in.)	Па	PYP Denis of	Finished 100	
	Stickup (ft.) ~ 2	t .	ume purged 6	gallons	
	Depth to bottom of well (ft.) BTO(3.77 cor	mments on Well Recovery	nne.	
. 7	Depth to water surface (fL.) BTDC	5.12			
8.65	Langth of water (n.)	.65 Add	fittonal Comments	ishe	
016	- Volume of water (#13)				
8650	(gai.)	3		1 - ' - 7	
28.40	Amount of sediment at bottom of weil (rt.)	VM San	nples Collegied: Stan	4581677 1437	Just +
	LHAPL (H.) N.M. DHAPL (H.)	NM Sa	Finish	1445	50.
3 great wis	M-SITU TESTING Date: 8 /2/93			· ····································	4 >
9 gallins	TIme: <u>0949</u>	0952 0953	0955 0956	1000 (1427)	
11. 3 weil	Water Level of BTX . NM	NW NW	NW NW	場。MADS.H. 25.17	1
(winimm)	Well Volume Purged (gal.)	$\frac{2}{3}$	4 5	, 6, ~7	
	Turbidity <u>Clear</u>	Viturbia viturbia		oid vitubil cleante	Milaid
HAN	odor none	More More	role none	note none	
HNU	200	$\frac{NN}{430} \qquad \frac{NN}{4.05}$	MM 1404 463	NM NM	
	pH (unite) 388 Conductivity (u mnos) 7.85	7.98 - 7.03	8.46 848	462 (407) 8.71 (829)	1
	Water Temperature (*2) 0F 418	55.0 53.8	53.9 53.8	8.7 <u>\$29</u> 54.3 <u>58.2</u>)
	us sp1/13	• 0.087 m ³ or 0.65 gal	1 ft. length 2" = 0.022 π		4
	_	clear, turbid, opeque	Revision Date:	- /	
1	TETC154			- t	

BTOC = Below Top of (Outer skel) Casing

FIGURE 3-2

E The Earth Technology G	ROUNDWATERS	SAMPLING Sample ID: POINWSQUY
PROJECT NAME Phel		JOB NO: 93/800-12 DATE: 8/27/93
WELL NO. MW3	LOCATION Sik	9
WEATHER CONDITIONS	not sonny hornel	S AMBIENT TEMP: 85 OF
PERSONNEL	Smith & PL	-0.
REVIEWED BY DET		
EQUIPMENT USED: Per	Istalic Pump + dispos	Subje polyethlylene hose; teflorbailer with disposed
PURGING DEVICE		SAMPLING DEVICE METALS \$ PER STULIC PUMP
Type Device? Perista	lic Pump	Type Device? <u>tellon miler for VOCS, SVOCS, TRHU Viset</u>
	aminated? See logbook	How was the device decontaminated? Potable Allonox - Author -
How was the line decontami	See L. Jank	DI water - methanit; airline How was the line decontaminated? disposable newnylon cord used each time
Which well was previously p	1441 - 109	Which well was previously sampled?
INITIAL WELL VOLUME		PURGING
Well diameter (in.)	<i>∂</i> "	Time started Finished 1154
Stickup (ft.)	~2'	Valume purged 8 gallons
Depth to bottom of well (ft.)	BOC <u>+5.68</u>	Comments on Well Recovery
Depth to water surface (ft.)		
Langth of water (ft.)	17.37	Additional Comments
Volume of water (ft3)	0.288	pt never is dufting (using pt paper
(gai.)		[asique)
Amount of sediment at bottom of well (ft.)	NM	Samples Collected: Start 1640
LNAPL (ML) NA	DNAPL (M.) NM	1650 Finish 1650
IN-SITU TESTING DAT		
1	no: 1141 1144	11:48 (15) 1154 1650
Water Level of BTX	NW NW	NM NN 37 24 15.33 15.31
Well Volume Purged (gal.)		+ is but turned turned SI.
Turbidity	clear tothich	
Odor FIJU Organic Vapor (ppm)	O NIM	NM I'M UM NM
pH (units)	8.5(7) 8.42 (7)	958(7) 954(1) (7)
Conductivity (µ mhos)	433 468	514 433 428 428
Water Temperature (*2) 0F	15.4 57.9	59.5 579 57.4 587
Rates: 1 ft. leng	gtn of 4" • 0.087 ft ³ or 0.1	
Turbidity	y choices: clear, turbid, o	paque Revision Date: 2-8-91

NM = Not Measured G-85

850 BTOX = Below Top of (Outer steel) (asing

TETC154

GROUNDWATER SAMPLING

= corporation GAOONDVATER :	Sample ID: MMW46W4
PROJECT NAME Pholos Collins RI	JOB NO: 931800-12 DATE: 9/8/93
WELL NO. MWY LOCATION Site 9	Radar Tower proposed location.
WEATHER CONDITIONS Cool, Cloudy,	•
PERSONNEL PALLAY and BE NORTON	
REVIEWED BY: DES	
EQUIPMENT USED: Bailer, Rope, pump essente	o filter
PURGING DEVICE	SAMPLING DEVICE .
Type Devices Pany Care Bayler	Type Device? Baile
How was the device decontaminated? See oxbook	How was the device decontaminated?
How was the line decontaminated? ded. cafed	How was the line decontaminated? <u>ded readed</u>
Which well was previously purged? Pzmws Resemble	Which well was previously sampled? ? 2mw 5 Re Sangele
INITIAL WELL VOLUME	PURGING
Well dlameter (in.)	Time started 0850 Finlahed 0910
Stickup (ft.) ~ 2'	Volume purged , <a> <a> <a> <a> <a> <a> <a> <a> <a> <a>
Depth to bottom of well (ft.) 32.29 Broc	Comments on Well Recovery Immedial
Depth to water surface (ft.) 20.63' B+oc	
Length of water (ft.)	Additional Comments
Volume of water (ft3)	
(gai.) \\.865	
Amount of sediment at bottom of well (ft.)	Samples Collected: Start D45
LNAPL (ft.) DNAPL (ft.)	Finish
IN-SITU TESTING Date: 9/1/53 9/1/63	११४/६३ ११/६३ ११८ ११/६७ ११८/६७
Time: 0950 955	850 0900 0905 0910 1100
Water Lavel 20.63 -	20.64
Well Volume Purged (gal.)	4 6 8 9 -
Turbidity none sl.	mud very very mod, med
Odor	·
Organic Vapor (ppm)	
pH (units)	
Conductivity (µ mho=) 352 328	323 332 318 323 348
Water Temperature (°C) 52.4 50.6	50.1 50.3 50.2 50.3 51.2
Notes: 1 ft. length of 4" > 0.087 ft ³ or 0.6	5 gal. 1 ft. length 2" > 0.022 ft ³ or 0.16 gal
Turbidity choices: clear, turbid, op	eque Revision Date: 2-8-91

G-86

Sing Sarah Technology GROUN	DWATER SA	MPLING S	Sample ID: 2	9MW5GW4	
PROJECT NAME Phelps Coll		ов но: <u>93186</u>	00-12 DATE	8/26/93	
WELL NO. MW5 LOC	ATION Sik 9				
WEATHER CONDITIONS PCloudy	humid.ralm	AMBIENT TEMP:	~ 80°F		
PERSONNEL J. Smith	17. Lay				
REVIEWED BY: DFJ	,		·		•
EQUIPMENT USED: Peristalic,	Pump + disposal	ole polyethlyles	ne hose; te	Honbailer withd	isposable
PURGING DEVICE		SAMPLING DEVICE	metals = p	eristalic pump	
Type Device? <u>Peristalic Pump</u>	0	Type Device?	effonmiller	for VOCS, SVOCS, TI	PH
How was the device decontaminated?	see logbook	How was the device d	econtaminated?	Twater-methan	ok ->
How was the line decontaminated?	ce logbook	How was the line deci	ontaminated? diso	osable newnylon used each time	7,211
Which well was previously purged?	SIRG MW3	Which well was previous	ously sampled?	P6 MW 3 GW 4	
MITTAL WELL VOLUME		PURGING	(n	_	
Well diameter (in.)	2"	Time started	Finish	1658	
Stickup (IL)	22'	Volume purged	(6)	gallons	
	53.65	Comments on Well Re	covery		
Depth to water surface (ft.) BTDC	21.57		11	2 77	
Langth of water (ft.)	33.08	Additional Comments	* PH net	erisdathi;	
Volume of water (ff3)	0.7	alal oli	realings	me suspect.	
(gai.)	5.13		· · · · · · · · · · · · · · · · · · ·		
Amount of sediment at bottom of well (fl.)	NM	Samples Collected:	Start	1659	
LNAPL (PL) NM DNAPL ((H.)NM	1715	Finish	1717	
IN-SITU TESTING Date: 8/0/9	3	26 110	10	<u> </u>	
Time: 154 Water Level 1 BTX 21.5	2	035 1650 1.62 21.61	2153	1717 <u> </u>	
Water Level If BTX 21.5 Well Volume Purged (gal.)		1.62 <u>31.61</u>	(9	16	
Turbidity (LLu		een cla	The state of the s	clev	
Odor non	e none n	one note	the state of	we	
Organic Vapor (ppm) NM			3020 .	NM _	
PH (unnu) # 8.00	$\frac{10.85}{600}$	87 9.31	3 1/2 .	(21)	
Conductivity (u mnos) 683 455	$\frac{44}{65.9} \frac{666}{65.9} \cdot \frac{5}{6}$	3.6 <u>63.6</u>	2 2 2 2 2 2 2 2 2 2	614	
Water Temperature (12) 0F 14.5			- 10		-
Notes: 1 ft. length of 4°	= 0.087 N ³ or 0.65 gr		2" = 0.022 m ³ or 0."		
Turbidity choic •=:	clear, furbid, opaqu	I■ Re	vision Date: 2-8-9	1	1

NM = Not Measured

G-87

BTOX = Below Top of (Outer skel) Casing

The Earth Technology GR	OUNDWATER SA	AMPLING	Sample ID: 79 MW (6644	
PROJECT NAME Pholos Callins ANG RT JOB NO: 931500-12 DATE: 9/14/93				
WELL NO. MWC	LOCATION Suto 9	RT		
WEATHER CONDITIONS Cool	, Rang	AMBIENT TEMP:	80°F	
PERSONNEL PHLA	DET			
REVIEWED BY: 158				
EQUIPMENT USED: Bailer, page, hund pump assembly fitter				
PURGING DEVICE		SAMPLING DEVIC	Ε	
Type Device? Bailer		Type Device? Bailer		
How was the device decontaminated? See Indian		How was the device decontaminated? Alcon ex+DI, DI RINSE		
How was the line decontaminated?		How was the line decontaminated? dedicated		
		Which well was previously sampled?		
Which well was previously purge	idi Tintas Capas A			
INITIAL WELL VOLUME		PURGING	2142	
Well diameter (in.)		Time started. 2037 Finished 2100		
Stickup (ft.) — 0.3		Volume purged	lo gallons	
Depth to bottom of well (ft.)	23.35	Comments on We	II Recovery immichical	
Depth to water surface (ft.)	14.44			
Langth of water (ft.)	8.91	Additional Comm	ents	
Volume of water (ft3)	0.196			
(gal.)	1.425			
Amount of sediment at	_	Samples Collecte	d: Start 1335	
bottom of well (ft.)	DNAPL (H.)	- -	Finish 1350	
IN-SITU TESTING Date:	9/14/93 9/14/93	1(14/53		
Time:	7037 2048 3	2100		
Water Level	14.44	444		
Well Volume Purged (gal.)	3	<u> </u>		
Turbidity	16 NC SI. 1	und		
Odor	mal Strong	Strong		
Organic Vapor (ppm)				
pH (units)	mable to calib	vete		
Conductivity (µ mhos)	PH and com	0		
Water Temperature (°C)	58.5° . 58.1	59,5		
Notes: 1 ft. length of 4" = 0.087 ft ³ or 0.65 gal. 1 ft. length 2" = 0.022 ft ³ or 0.16 gal				
Bushidly she	nices: clear, turbid, opa	que	Revision Date: 2-8-91	

Appendix H: Surveying Data

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R. S. Scott Associates, Inc.

ARCHITECTS, ENGINEERS, SURVEYORS

405 RIVER STREET ALPENA, MICHIGAN 49707 (517) 354-3178

November 4, 1987

W.O. 4-7347

```
ELEV.
              ELEV.
                                            P.W. #1 - Conc. Floor
                               = 681.03
                     SF5 - MWl
            691.00
RT9 - MWl
                      SF5 - MW2 = 681.29(a) Directly opposite well on
            692.85
RT9 - MW2 =
                                            West Side
                      SF5 - MW3 = 682.27
RT9 - MW3 = 685.50
                                   681.97
                      SF5 - MW4
         = 687.77
RT9 - MW4
                                            P.W. #2 - Conc. Floor
                      SF5 - SB1 = 677.95
            687.85
RT9 - MW5
                      SF5 - SB2 = 677.85 Directly North of well
             691.27
RT9 - SBl
                      SF5 - SB3 = 680,05
                                           casing
         = 689.87
RT9 - SB2
RT9 - SB3 = 685.57
                      SF5 - SB4 =
                                   678.95
                                            P.W. #3 - Top of casing
RT9 - SB4 = 687.01
                                = '690.54 with cap on =
                                                             680.16
                      LF6 - MWl
          = 685.71
RT9 - SE5
                      LF6 - MW2
                                = 685.01
RT9 - SB6 =
            688.81
                                            P.W. #4 - Conc. Floor
                      LF6 - MW3
                                = 687.14
                                            West Side =
                                                              693.59
                                   683.74
                      FF7 - SBl
CG3 - MW1 = 687.96
                      FF7 - SB2 = 682.64
CG3 - MW2
         = 694.41
                                            P.W. #5 - Top of well cas
                      FF7 - SB3 = 684.34
CG3 - MW3
         = 690.01
                                                        =
                                            under cap
                      FF7 - SB4 = 682.54
CG3 - MW4
         = 694.13
         = 694.26
CG3 - MW5
                                            P.W. #6 - Well appears to
                               = 649.66^{1}
CG3 - SB1
         = 691.92
                      Spring #1
                      Spring #2 = 649.78 under trailer - trailer
CG3 - SB2 = 691.72
                                            floor at bathroom door
                      Spring #3 = 644.19
CG3 - SE3
         = 692.22
                                                              681.51
                      Spring #7 = 646.23
CG3 - SB4 = 692.02
                                 = 646.19
CG3 - SB5 = 691.92
                      Spring #8
CG3 - SB6 = 692.02
                                           (Staff Gauge #1 = 674.41
                                   690.24
                      TF4 - MWl
                                =
CG3 - SB7
         = 692.72
                                            Staff Gauge #2 = 672.65
                      TF4 - MW2 = 688.63
                                           | Staff Gauge #3 = 673.41
| Staff Gauge #4 = 673.01
CG3 - SB8
         = 692.32
                      TF.4 - MW3 = 685.00
CG3 - SB9 = 691.82
                      FT4 - MW4 = 686.14
CG3 - SB10 = 692.02
                                            Staff Gauge #5 = 673.21
                                =
                      TF4 - SBl
                                   686.23
                                            Staff Gauge #6 =
                      TF4 - SB2 = 686.33
HN8 - MW1 = 687.15
                     TF4 - SB3
                                 = 686.43
         = 693.00
HN8 - MW2
                      TF4 - SB4
                                 = 686.23
HN8 - MW3 = 693.65
                                             - Staff gauges 1-6 dod not
HN8 - MW4 = 693.75
                      Galvanized Pipe Wells
                                               exist es it tuly 1993
HNS - SB1 = 690.27
                                 = 680.19
                      #l
                                                JSB 6/14/45
                                    680.13
             684.63
                      #2
MP2 - MW1 =
                                 = 681.T7
MP2 - MW2 = 683.87
                      # 3
                                 = 678.10
                     # 4
MP2 - SB1 = 682.56
                                 = 680.65
                     # 5
    - MW3 = 683.43
MP
                                 = 681.77
    -MW4 = 683.59
                      # 6
MP
                                 = 682.44
MP - MW5 = 683.47
                      # 7
NOTE: Elevations as shown were taken at the following locations:
Monitoring Wells: Top of the rim, inside next to the hasp.
Soil Borings: Ground surface at the boring location.
Springs: At the water discharge point.
Galvanized Pipe Wells: Top of casing below the cap.
Staff Gauges: Top of the nail at the gauge.
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August 23, 1988

ELEV.

SF5 - MW2 = 680.31

Staff Gauge #6 = 634.46

(a) Well and staff gauge were repaired in August 1988 due to damage. R.S. Scott shot new elevations in August 1988.

Surveying Data - August 1993

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DENTIFICATION NOBER	- H	KETERENCE Point TYPE		EAST (X) COORDINATE	NOBTH (Y)	COORT	KLEVATION (Z) COORDINATE
	ABIT	3017	OTETE			CEROUND	EDE
		BOMENG		on remark	15441 #	FIRE	RC HTA
SIMM	×			10224.80	1304001	0100	2010
SIMMZ	×			18396.47	15,53.11	6.91.6	621.10
SIMMS	×			18267.71	15094.96	681.0	200
No.	*			18359.24	15875.88	679.3	678.94
SAME	×			18045,17	15408.50	_	
	×			18078.39	15717.59	677.2	679.28
Continuo O	×			17823.93	15389,00	678.1	877.74
Catalan T	×			18169.08	15949.70	678.3	680.20
7 1177	*			18045.33	15421.98	6780	680.27
SO SIMILIA			PETZOMETER	18299.93	15377.91	679.6	679.18
17.11			PETTOMETER	18132.60	15386.60	679.3	679.06
I SIPE			PETOMETER	18386.38	15773.28	679.6	678.34
SIPLO		,		187.60 11	15184.00	679.4	
SISBA		ζ,		187.7.88	15165.30	690.7	
SISBS		,		18184 2D	14284 20	679.5	
SISB6	-	,		19 00 10	15780 AT	1003	
SISB7	-	,		18088 90	15,400,70	67R.9	
S1588		Χ,		19197 58	15480.24	680.7	
51580		χ,		18744.70	15574 71	678.8	
Sissio		,		18331.07	15583.39	679.71	
Siseri		,		18315.98	15752.54	678.0	
71900	-			18407.33	15780.24	679.3	
SECTION	×			19177.93	15644.00	6829	682.62
THE CHANGE	×			16664.42	15876.93	9.183	663.78
MP SULL	×			19099.82	16301.46	681.3	683.18
MP2MW4	×			18902.92	16208.65	- 6B1.4	663.44
MPZIANS	×			18902.95	1618R.32	681.3	622.39
HWY OT	×			19038.02	16585.46	683.1	687.85
UP2UW7	×			19255.95	16092.98	6.83.1	882.73
WP9SR2	-	×		19080.24	16115.91	683.3	
UP7CR1	-	×		19157.12	1610a.92	683.3	-
MP759A	-	×		18320.53	16085.64	683.4	
MD-2004		×		19287.27	16073.03	683.4	
10000		×		19091.18	15650.30	662.6	
100000 M	-	×		18979.30	15675.17	682.1	
M-Z-3/	-	×		19035.60	15784.71	682.3	
005200	-	×		19281.44	16051.20	683.4	
	×			2032251	15856.35	865.7	687.87
Contract	×			19865.45	16309.69	692.0	1 694.30
CONTRACT	>	_		19528.94	16008.16	687.9	699.80
COMIES	×			19657.11	16135.79	6920	694.00
					-		

MP2ANW5 MP2ANW5 MP2ANW6 MP2ANW6 MP2ANW7 MP2A	19036.02 1925.95 1925.95 1935.12 19287.27 19287.27 19091.18 18979.30 19251.44 2032.51 1965.45 19528.94 1965.45 1965.45 1966.40 1974.38 1974.38	16585.48 16002.88 16115.91 16115.91 1606.82 1605.64 1607.3.03 15650.30 15675.17 15075.17 16051.20 15650.35 16309.68 16108.16 16135.79 16065.53	683.1 683.1 683.3 683.4 683.4 682.1 682.1 682.3 682.3 683.4 683.4 683.4	682.78
WP2MW6 X	19255.95 19080.24 19157.12 19280.53 19280.53 19280.20 19280.30 19085.60 19261.44 2032.51 1965.45 19528.94 1965.45 19667.67 19667.67 19667.67	16092.89 16115.91 16115.91 16085.64 16073.03 15650.30 15675.17 15784.71 1639.69 16008.16 16135.79 16095.53	683.1 683.4 683.4 682.4 682.3 682.3 682.3 683.4 683.4 683.4 682.3 683.4	682.78
UP28B2	19255.95 19080.24 19157.12 19287.27 19287.27 19287.27 19081.16 19035.60 19261.44 2032.51 19665.45 19528.94 19657.11 19667.67 19721.54 19663.05 20148.55	16092.00 1615.91 1616.92 16085.64 16085.64 16073.03 15650.30 15675.17 1639.69 16008.16 1635.79 16065.53	683.4 683.4 683.4 682.4 682.1 682.1 683.4 683.4 683.7 683.4	
MP2SB2	19080.24 19157.12 19287.27 19287.27 19287.27 18979.30 1903.56 19261.44 2032.25 19865.45 19667.87 19667.87 19663.05 20148.55	16/15.91 16/05.82 16/05.64 16/07.3.03 15/05.0.30 15/07.84.77 16/05.12 16/05.12 16/05.12 16/05.79 16/05.79 16/06.53	683.3 683.4 683.4 682.6 682.1 682.1 682.1 682.0 682.0	
MP25814	19157.12 19287.27 19287.27 19091.18 18979.30 19035.60 19251.44 2032.51 19865.45 19528.94 1965.7.11 19667.87 19743.98 19743.98	16085.64 16085.64 16073.03 15650.30 15675.17 15784.71 16051.20 15650.35 16309.69 1610.88 16175.79 1608.76 16155.79	683.4 683.4 682.6 682.3 682.3 682.3 682.3 682.0 682.0	
MP2SB4	19287.27 19287.27 19287.27 18099.30 19035.60 1925.44 2032.51 19865.45 19528.94 19657.11 19667.87 19663.05 19663.05	16085,64 16073,03 15650,30 15675,17 15078,17 16051,20 15656,35 16309,69 16008,16 16135,79 16085,53	683.4 682.1 682.1 682.3 682.3 683.4 683.4 682.0	
MP2SB5 MP2SB6 MP	19287.27 18091.18 18979.30 19035.60 19261.44 2032.51 19865.45 19528.94 19657.11 19667.87 19698.40 19743.98 19743.98	16073.03 15650.30 15675.17 15784.71 16051.20 15650.35 16309.69 16135.79 16155.79 16065.53	682.4 682.1 682.3 682.3 683.4 683.7 682.0 692.0	
MP28B5 MP28B6 MP28B6 MP28B6 MP28B6 MP28B6 MP28B6 CG3MM1 CG3MM2 CG3MM2 CG3MM3 CG3MM3 CG3MM3 CG3MM3 CG3MM3 CG3MM3 CG3MM3 CG3MM3 CG3MM3 CG3MM3 CG3MM3 CG3MM3 CG3MM3 CG3MM3 MA CG3MM3 MA CG3MM3 MA CG3MM3 MA CG3MM3 MA CG3MM3 MA CG3MM3 MA CG3MM3 MA CG3MM3 MA CG3MM3 MA CG3MM3 MA CG3MM3 MA CG3MM3 MA CG3MM3 MA CG3MM3 MA CG3MM3 MA CG3MM3 MA CG3MM3 MA MA MA MA MA MA MA MA MA MA MA MA MA	19091.18 18979.30 19035.60 19261.44 20322.51 19865.45 19528.94 19657.11 19667.87 19668.40 19743.98 19743.98	15650.30 15675.17 1675.17 16051.20 15650.35 16309.69 16108.16 16135.79 1615.48	682 1 682 3 682 3 683 4 683 7 682 0 687 9	
MP2SBB X	18979.30 19035.60 19261.44 20322.51 19865.45 19528.94 19657.11 19667.67 19743.98 19743.98 19743.98	15675.17 16051.20 15856.35 16309.69 16008.16 16135.79 16141.48 16065.53	682.3 682.3 683.4 685.7 687.0 692.0	
MP2SB7	19035.60 19261.44 2032.251 19865.45 19528.94 1967.11 19667.67 19667.67 19663.05 19663.05	15784.71 16051.20 15856.36 16309.89 16008.16 16135.79 16065.53	682.3 683.4 685.7 692.0 697.9 692.0	
NECOMM N	19261.44 2032.51 19865.45 19528.94 1967.11 19667.67 19743.98 19743.98 19721.54 19663.05	16051.20 15856.35 16309.88 16008.16 16143.48 16095.53 16896.53	683.4 685.7 682.0 687.0	
CC3MW1	203251 1985.45 19528.94 19657.11 19667.67 1968.40 19743.98 19721.54 19663.05	15856.35 16309.88 16008.16 16135.79 16141.48 16095.53 16845.21	685.7 692.0 667.9 692.0	
CC3MW1	19865.45 19865.45 19528.94 19667.87 19667.87 19743.98 19743.54 19721.54 19663.05	16309.89 16008.16 16135.79 16141.48 16095.53 16895.53	692.0 692.0	687.67
CG3MV2 CG3MV4 CG3MV4 CG3MV7 X F44MV7 F44MV7 F44MV7 F44MV7 F44MV7 F44MV7 F44MV7 X F44MV7 F44MV7 X F44MV7 X F44MV7 X F44MV7 X F44MV7 X F5MV7 X X CG3MV7 X X X X CG3MV7 X X X X X CG3MV7 X X X X X CG3MV7 X X X X X X CG3MV7 X X X X X X CG3MV7 X X X X X X X X X X X X X X X X X X X	19528.94 19528.94 19657.11 19667.87 19698.40 19743.54 19683.05 20146.55	16309.08 16008.16 16141.48 16095.53 1684.21	687.0	504 30
CCSMWJ X	19528.94 19657.11 19667.67 19698.40 19743.98 19721.54 19683.05 20146.55	16105.79 16141.48 16065.53 16844.21	692.0	690 80
CGSMW4 CGSMW5 CGSMW6 CGSMW6 CGSMW7 CGSPZ1 CGSPZ2 CGSPZZ2 CGSPZZ2 CGSPZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZ	19657.11 19667.67 19698.40 19743.98 19721.54 1968.305 20146.55	16133,79 16141,48 16095,53 16844,21	0950	604.00
CGSAMS CGCSAMS CGC	19667,67 19696,40 19743,98 19721,54 1966,305 20146,55	16095.53 16844.21		20.1.00
CCSMING	19696.40 19743.98 19721.54 1966.3.05 20146.55	16095.53	6820	200
CGSSB12 CGSSB12 CGSSB12 CGSSB12 CGSSB13 X CGSSB13 X CGSSB13 X CGSSB13 X TF44MM X TF4	19743.98 19721.54 19663.05 20146.55	16844.21	691.6	691.79
CGSSB12 CGSSB12 CGSSB13 CGSSB13 CGSSB13 TF44MM TF44MM TF44MM TF44MM TF44MM TF44MM TF48B15 SF54MM SF54MM SF54MM SF54MM SF54MM TF45B15 T	19721.54 1966.3.05 20148.55	100	690.6	690.14
CCGSP21 CCGSB13 CCGSB1	19663.05 20146.55	16062.00	692.0	691.73
CGSP122	20146.55	15689.68	691.5	691.08
CGSSB11 CGSSB12 CGSSB13 TF4AMY TF4AMY TF4AMY TF4AMY TF4AMY TF4AMY X TF4SB15 TF5SMM X SFSMM X S		16134.48	690.8	
CCCSSB12	20135.22	15942.33	690.9	
TEALWA	19663.06	15689.68	691.5	
<xx td="" x="" x<=""><td>19833.53</td><td>19857.78</td><td>682.7</td><td>684.75</td></xx>	19833.53	19857.78	682.7	684.75
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×××××	19475.99	19603.40	686.1	88B.41
< ×××××	19548.37	18576.17	687.9	69a05
***	19601.99	19780.59	686.8	
	19839.47	204.34.36	678.8	680.93
	18146.84	20588.13	679.0	680.21
	16267.38	20306.97	680.1	68214
	18370.79	20360.96	679.80	6B1.78
-	18196.33	20447.54	678.7	880.59
	18275.41	20533.00	678.8	680.52
	18469.17	20359.42	679.3	681.28
- 1	18275.41	20533.00	67&B	681.12
	18567.94	20274.30	.679.3	B71.24
SAN MAG	18162.47	19741.08	686.6	860 38
	18070.08	19940.25	682.5	684.86
LF64W2	1,40,62,49	19600.76	684.8	686.97
LFGA(M3	177K1 0A	20155.49	6827	684.59
U UBAW				
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IDENTIFICATION NUMBER		POINT TYPE	i	COORDINATE	COORDINATE	COORT	COORDINATE
	WEIT	BOIL	OFFIES			GROUND	ROK
FORTWE	×			17902 45	96 AF005	9 140	77 500
I FBNWS	×			18257.52	18411.45	583	687.18
LF6HW7.	×			17855.84	19628.03	684.1	686.00
LFGHWB	×			19745.18	17984.61	6829	685.01
LF61W9	×			19858.79	17950.27	682.3	684.21
LFBUM 0	×			17743.09	20015.35	680.7	682.70
HIN BLAW!	×			20424.46	16241.29	687.3	687.11
HNBKWZ	×			20170.26	17023.30	8.088	692.91
HN BATW3	×			20101.13	16583.59	691.4	693.47
HN8W4	×			20089.64	16588.20	691.6	693.84
HNBMWS	×	-		20317.55	1880.22	697.6	687.49
HN8SB2.		×		20390.58	16479.64	668.3	
HNRSB3		×		20321.60	16459.88	688.4	
HN6594		×		20190.38	16618.05	6,689	
HABSB5		×		20334.88	16358.34	688.3	
HNESBB	•	×		20189.28	16433.67	691.2	
HN 6587		×		20166,87	16361.80	690.7	
HN8SBB		×		20390.31	18381.25	688.4	
RTSHWI	×			20224.38	17920.04	688.9	690.79
RTBUWZ	×			19887.73	18432.03	690.5	692.63
RTBHWS	×			19545.58	18122.35	683.2	685.22
RT94W4	×			19673.73	18430.34	685.4	687.52
RTSUNS	×			19656.42	1842B.12	885.3	B87.61
RTENING	×			19675.51	18138.67	665.3	685.00
RT9TW7		-	TEST WELL	19872.55	18244.BJ	686.1	
RTDIWB			TEST WELL	19695.52	17613.68	685.7	
RTBSB13		×		19607.45	17776.60	6.88.9	
SPRING /			SPRING	18953.14	19214.74	651.2	
SPRING 12			SPRING	19584.35	19272.79	651.1	
SPRING AS			SPRING	19570.00	19361.67	648.7	
SPRING #			SPRING	19516.17	19185,68	651.6	
SPRING (5	1		SPRING	19474.84	19172.83	652.5	
SPRING #8			SPRING	19338.53	19284.41	649.7	
			BENCHMARK	17678.06	20155.49		875.04
B.M. IN 20" WHITE PINE STUMP			BENCHWARK	17616.97	15505.52		674.72
B.M. IN 8" WITE BIRCH			BENCHWARK	19581.73	1934221		651.31
SE CHILLIAN SOCIETY	_	_	DESCRIPTION				

By staff gauge # 3 (Site 6+7) 6/12

By staff gauge # 4 (Site 1) 6/14/85/30

Beachmerk in sinkhole jused

be determine elevation for staff funge #

In sinkhole 138 6/14/87

these one the only existing 353 6/14/35 Staff gauge alevations are presided on Table B-1; do, to the staff, guyes

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JOHN ENGLER GOVERNOR

DEPARTMENT OF COMMERCE STATE OF MICHIGAN

H 109423

BOARD OF PROFESSIONAL SURVEYORS

FROFESSIONAL SURVEYOR LICENSE

DUANE R MAC NEILL 432 RIPLEY PLVD ALPENA MI 49707

PERMANENT I.D. NO.

EXPIRATION DATE

THIS DOCUMENT IS DULY ISSUED UNDER THE LAWS OF THE STATE OF MICHIGAN.

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10/31/95 2515177

NAO 27 \$ 45 04 50,23900 \$ 83 33 56,18500 NAP 83 \$ 45 04 50,28171 \$ 83 33 56,11395

Collins 1956 RM 1 \$\operate{45} 04 50. \\
\$A 83 33 56

AP 1966 5TA B SCALED \$450702 \$83358

ARP 1966 SCALED. \$45 07 18 \$4 87 38 04

NANCY.

301-713-3242 NGS INFO LINE CD ROM 5000 (13 STATES) 51/4 OR 31/2 @ 3000 By COUNTY.

JANUARY 1973

U.S. DEPARTMENT OF COMMERCE INTIONAL OCEANG AND AIMOSPIERIC ADMINISTRATION NATIONAL OCEAN SURVEY

VERTICAL CONTROL DATA
by the
NATIONAL GEODETIC SURVEY
SEALEVEL DATUM OF 1929

 QUAD-----, 1,50(ξ)

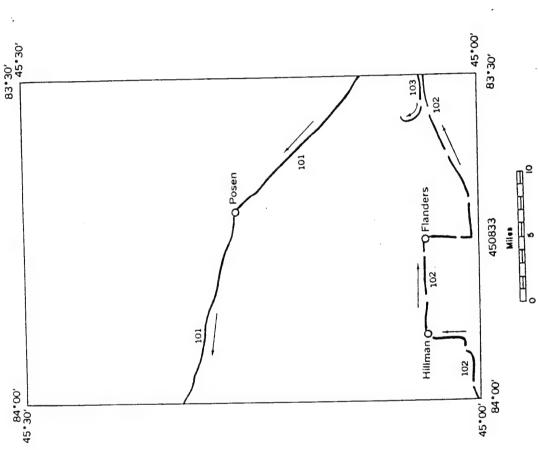
 HIGHIGAN
 4,5° Ω, 4,5° 30°

 LATHTUDE
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 84° 00°

 DIAGRAM
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HOAA FORM 76-127

REPLACES EARLIER LISTS

The state of the s

USCOMM-HOAA-ASHEVILLE

JAHWARY 1973

U.S. DEPARTMENT OF COMMERCE PARTMENT OF TRAILORAL OCEANG AND AIMOSPIERIC ADMILISTRATIONAL NATIONAL OCEAN SURVEY

REPLACES ELEV. OF MAINI 1962

ADJUSTMENT OF 1929 HGZ L-2350

W. M. Gibson 1934 FIRST-OHUMER

(Holers) (Feet)	215.119 704.175 215.119 705.770 RESTROYED DESTROYED	222).695 721,.061, 228.1,21, 749.421 239.258 781,.966 21,8,902 816.606	DESTROYED DESTROYED 24.7.04.3 810.507 255.887 839.523 DESTROYED
 DELICH HARK	HV 25 (DM RY) Q 36 R 36 S 36	T 36 U 36 RV 26 (DM RY) Y 36	2 36 A 37 RV 27 (DM RY) B 37 C 37

W. M. Gibson 1934 SECOND-ORDER ADJUSTHENT OF 1940 HGZ L-2384

ELEVATION (Feet)	847.049 779.142 725.136 761.708	766.140 741.741 681.610 659.943
ADJUSTED E	258.181 · 237.483 221.022 232.169	233.520 226.083 207.755 201.151
BENCH MARK	2 79 0 80 0 80 8 80	8 5 3 X

HGZ 12-20817	8-11-66 8-19-66 SECOND-ORDER	ADJUSTED ELEVATION	9.	203.664 668.188	207.550 680.215
ADJUSTMENT OF 1966	E. T. Ogilby 6-11-66	BENCH MARK	C 183	587 0	AP 1966 STA A

688.056 688.056 688.558 689.326 679.077

209.687 209.720 209.875 210.107 206.983

P 183 COLLINS RM 1 COLLINS RM 2 ARF 1966

VERTICAL CONTROL DATA

By the

DATIONAL GEODETIC SURVEY

SEALEVEL DATUM OF 1929

1,5° 00: 83° 30: ALFERM QUAD 4.5
KICHIGAN
LATITUDE
LONGITUDE
DIAGRAM

36° 17-71

K E

25857

JANUARY 1973

U.S. DEPARTMENT OF COMMERCE HAIIONAL OCEANIC AND AIMOSPHENC ADMINISTRATION NATIONAL OCEAN SURVEY

VERTICAL CONTROL DATA

by the NATIONAL GEODETIC SURVEY SEALEVEL DATUM OF 1929

00/AD (1704)3 PAGB NO, 5
H1011/GN (1/5) 00, (5) 30, (5) 30, (100 00) 100 0

HE 103

DESCRIPTION OF BENCH NAME.

Designation C 183 State Historical County Alpsin Charles T.T.O. State town Alpsin Charles Fr.T.O. Charles and direction from mercent town 3.0 miles west tweeting data August 1966 Estephine data August 1966 Estephine G 183 1966 Estephine description

The mork is located \$3.0 miles west of the intersection or State High-way 32 and the Detroit & Maskinge Railroad trees at the intersection of State Highway 32 and walter Street 0.9 mile west of B 183 and 1.25 miles cant of D 13, 90 reet wast oi the centerline of Walter Street, and 54 feet north of the centerline of State Hishway 32. The mark is a ntandered disk enteninged will make 18 a ntandered seet and \$1 feet Lord Nature for oil a large houster which projects \$1 feet and \$1 is \$1 feet Large than the road.

DESCRIPTION OF BENCH MARK

nestration D 183 State Michigan County Almena County Almena County Almena County Almena County Almena County Almena County Almena County Almena Constant of State Angust 1966 Constant of State County Almena State Angust 1966 Detailed description

The nerk is located 3.2 miles went of the intermettion of State Hirhmay 32 and the Detroit & Hackinge Halfroad tracks, 1.25 miles west of 2.13, 0.85 mile east of E 181, on the property of the F. 4 asko Snall Animal Clinic, 74 feet south of the centerine of State Hirway 32, 22 feet west of the centerline of the distance of State Hirway 32, 22 west of a guyed power hole. It is a standard disk stanged "D 183 1966" and in to of a himbonic content post flush with the ground and is about two feet higher than the highway.

DESCRIPTION OF BENCH MARK

Preference and direction from newrest town 5.0 miles west standere of direction from newrest town 5.0 miles west standard disk Exist Standard disk Existing Standard disk Existing Standard disk Existing Standard disk Existing Standard disk Existing Standard disk Existing Standard disk Existing Standard disk Existing Standard S

The mark is located 4.0 miles west of the intersection of Strte Highway 32 and the Detroit & Mackinac Railroad tracks, 0.8 miles west of D 183, and about 6000 feet east of the north-south runway extended. The mark is at the north-set corner of the intersection of 2-2 with a T-road to the right, and is on 1.3. Government prometry. It is 77 feet north of the centerline of M-13. 10 feet east of the centerline of M-13. 10 feet east of the centerline of M-14 miles of A-14 miles of A-15 miles of A-15 miles of A-15 miles of A-15 miles of A-15 miles of A-15 miles of A-15 miles of A-15 miles of A-15 miles of A-15 miles of A-15 miles of A-15 miles of A-15 miles of A-15 miles of M-15 miles

DESCRIPTION OF BENCH MARK.

Designation AP 1966 STA Grate Michigan County Alpena Chief of merts E.T.O.

Distance and direction from nerest town 6.5 mi. West Leveling date August 1966 Character of san Scandard topographic mark steeplas AP 1966 CTA A Exablined by USCGGS

The station is located at Phelps Collins Airport 175.0 ft east of the Intersection of the centerline of runway end 56 and the end of the overrun. It is a standard topographic disk set in the top of a concrete post and is stamped "AF 1966 STA A".

DESCRIPTION OF BENCH MARK

Nestestion F 163 State Highlian County Ainell.

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The mark is located at Phalps Collins Airbort in the center of the is set in the top of a 9 inch content in the Thuran brilding. It is set in the top of a 9 inch contents post flush with the fround. The mark is 10 feet north of the edge of the south walking from the training, of feet well of the airplane parking area and a wife ferme 75.5 feet each of the cost face of the terminal, and lifet south of the middle walking from the terminal.

DESCRIPTION OF BENCH MARK

Designation CCULLIS State Hischigen County Alventa

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The mark is located 6.5 miles west of Alpens, on Phelrs Collins Afrnort at the intersection of 3rd Street and Esst Arence, 108 feet southerest of the intersection, 64 feet southwest of the southwest corner of Building T.10, 35 feet west of a witness post, 34 feet east of the center of 3rd Street, and 20.5 feet west of the southwest leg of the beacon tower. It is a standard disk sot in a concrete post flush with the fround and is attreed acounts 1056."

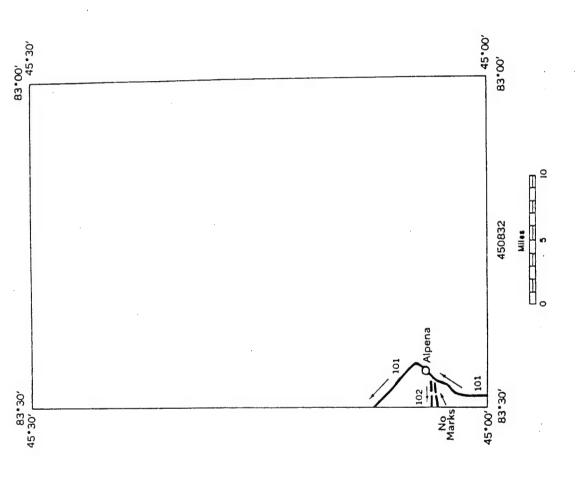
HOAA FORM 16-137

U.S. DEPARTMENT OF COMMERCE NATIONAL OCEAN AND ATMOSPHERIC ADMINISTRATION NATIONAL OCEAN SURVEY JANUARY 1973

VERTICAL CONTROL DATA
by the
by the
stational Geodetic Survey
sealevel datum of 1920

to 45°30° to 83°30° --1,50832 45.001 83.001 ALPENA QUAD-----MICHIDAN LATITUDE LONGITUDE DIAGRAM





USCOMM-NOAA-ASHEVILLE

REPLACES EARLIER LIST

JANUARY 1973

U.S. DEPARTMENT OF COMMERCE NATIONAL OCEANG AND ATMOSPHENG ADMINISTRATION NATIONAL OCEAN SURVEY REPLACES RIEV, OF APRIL 1962

VERTICAL CONTROL DATA by the NATIONAL GEODETIC SURVEY SEALEVEL DATUM OF 1828

to 45°30° to 83°30° PAGE 110 1

QUAD 450832

MICHIDAN
LATITUDE 45°001 1
LONGITUDE 83°001 1
DIAGRAM ALPENA

LINE 101

ADJUSTMENT OF 19	1929	HGZ I-2350
W. M. Gibson	1934	SECOND ORDER
BENCH MARK	ADJUSTED EI	ELEVATION
н 36 г 36 г 36	189,878 62 190,251 62 DESTROYED DESTROYED	622.958 624.182 YED YED
ADJUSTMENT OF 1	1966	HGZ L-20817
E. T. Ogilby 8	8-11-66 9-19-66	6 SECOND ORDER
H 36	184.972	606.862
FIRE LOWK 1941 (USLS) FH LIBRARY (USLS)	180,595 592,502 NOT RECOVERED DESTROYED	59 2. 502 Tered (ED
Po (usis)	180.525	591,616
ADJUSTMENT OF 1929	929	HGZ L-2350
W. M. Glibson	1934	SECOND ORDER
N 36 P 36	189.580 210.929	621.980 692.023

LINE 102

ADJUSTMENT OF 1966 HGZ L-20817	E. T. 0g11by 8-11-66 9-19-66 SECOND ORDER	BENCH MARK - ADJUSTED ELEVATION - (METERS) (PEET)	63 185.722 602.761	194.552 638.293
ADJUST	. н.	BENCH	A 183	B 185

JANUARY 1973

U.S. DEPARTMENT OF COMMERCE NATIONAL OCEANG AND ATMOSPHERIC ADMINISTRATION NATIONAL OCEAN SUIVEY

VERTICAL CONTROL DATA

by the NATIONAL GEODETIC SURVEY SEALEVEL DATUM OF 1929

PAGE 110. 3 QUAD 450832 MICHIDAN LATITUDE 45°CO! LOHGITUDE 83°00! DIAGRAM ALPEHA

to 45°30° to 83°30° HL 17-7

LINE 102

SPUR LINE TO PHELPS COLLINS AIRPORT

DESCRIPTION OF BENCH MARK

Perigantian A 183
Restriction A 183
Restriction Alpena
Courty Alpena
Character of entricion from marrest town At Alpena
Character of ent Standard disk
Established by GAGS

Chief of parit AUGIST 1966
Leveling date
Market 183 1966" Cousty Alpens

The mark is located 0.2 mile west of the intersection of State Highway 32 and the Detroit & Macines Railroad tracks in the center of a grass island in a Heinigas State Highway rest area. The mark is 94, feet southwest of the center of three 4.-Cook willow trees, 68 feet west of the centerline of S. Eleventh Street, 85.5 feet south of a drinking fountain, 61 feet east of a blared maple tree, and 44, feet north of the centerline of State Highway 32. It is a standard disk set in top of a 9-inch concrete post flush with the ground and stamped "A 183 1966".

The mark is 0.7 mile southwest of H 36 and 0.85 mile east of B 183. Detailed description

DESCRIPTION OF BENCH MARK

state Michigan cousts Alpena 2.0 miles west Passet to a Alpha passet to a Alpha Distance and direction from searest town Carsolve of art. Standard disk Established by CAS Dessite description

This mark is located 2.0 milus west of Alpons along State Highway 32, 0.65 mile west of A 185, 0.9 mile east of C 183 in the southwest 2X2 concrete guy anchor for the WATZ restic unterms, 179 feet north of the centerine of State Highway 32, 70 feet west of the west face of WATZ radio station building. The mark is a standard disk stamped "B 183 1966" set in the top of the anchor projecting 6 inches and is about 5 feet higher than the highway.

county Alpens chief of party E.T.D. Levelles date August 1966 stamples "B 183 1966"

here at offered at the present time I will get it by the first it Next Elec. I don't have the information Power Pole in Front oin All Phore We have a New B.M. set by This might be gone by Moni

and to you of of

SPUR LINE CONTINUES INTO QUAD 450833

PESET 1991 Bm 183 17LPENA 636.238 95.05 t 500 S BAGLEY C. Lindgran Dist. #4 Jurveyor

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Appendix I: Analytical Results; Investigation Derived Wastes - Decontamination Water and Soil Cuttings

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BIOLOGISTS, TOXICOLOGISTS & CHEMISTS

106 VANTAGE POINT DRIVE OVERLOOK BUSINESS CENTER CAYCE, SOUTH CAROLINA 29033 (803) 791-9700 FAX (803) 791-9111

CERTIFICATE OF ANALYSIS

SC DHEC CERTIFICATION NO. 26103 NC DEM NO. 329 VA VDH-DWSE NO. 00303 TN DHE NO. 2964 Page 1

Client:

EARTH TECHNOLOGY CENTER 683 EMORY VALLEY RD. OAK RIDGE, TN 37830-

Project Name:

Phelp Collins A&G

Attention:

JEAN MCKEE

SHEALY Lab No: 44079R Description: PPT5002

Coll. Date: 08/23/93 Coll. Time: 1420

Date Received: 08/24/93 Date Reported: 08/30/93 Date Revised: 08/31/93

QA/QC Officer MAS

* Extraction Date 08/25/93 ** Blank depletions >0.50 mg/l

** Blank depletions >0.50 mg/l Parameters	Result	Units	%Spike Recovery	Analyst	Date Analyzed
BOD5-Total TPH 418.1 TSS	**138 <5.0 10	mg/l mg/l mg/l		KAB MDE RLB	08/25/93 08/24/93 08/24/93
METALS Antimony Arsenic Beryllium Cadmium Chromium Chromium Copper Lead Mercury Nickel Selenium Silver Thallium Zinc VOLATILE ORGANICS METHOD 624 Benzene Bromochloromethane Bromodichloromethane Bromoform Bromomethane 2-Butonane (MEK) Carbon tetrachloride	<0.020 <0.050 <0.005 <0.005 0.036 <0.010 <0.020 <0.001 <0.005 <0.050 <0.005 <0.100 <0.005 <0.100 <0.005 <0.100 <5.0 <5.0 <5.0 <5.0 <5.0 <5.0	mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l	116.0 97.0 95.0 94.0 93.0 97.0 106.0 93.0 100.0 99.0 95.0 94.0	FT FTT FTT FTT FTT FTY	08/27/93 08/27/93 08/27/93 08/27/93 08/27/93 08/27/93 08/27/93 08/27/93 08/27/93 08/27/93 08/27/93 08/27/93 08/27/93
Chlorobenzene Chloroethane 2-Chloroethylvinylether Chloroform	<10.0 <5.0 <5.0	ug/l ug/l ug/l	100.0		

Page 2 (Continuation of 44079R) Parameters	Result	Units	%Spike Recovery	Analyst	Date Analyzed
Chloromethane	<10.0	ug/l			
Dibromochloromethane	<5.0	ug/l			
1,2-Dibromoethane (EDB)	<5.0	ug/l			
1,2-Dichlorobenzene	<5.0	ug/l			ì
1,3-Dichlorobenzene	<5.0	ug/l			
1,4-Dichlorobenzene	<5.0	ug/l			
Dichlorodifluoromethane	<10.0	ug/l			
1,1-Dichloroethane	<5.0	ug/l			
1,2-Dichloroethane	<5.0	ug/l	00 0		
1,1-Dichloroethene	<5.0	ug/l	99.0		
trans-1,2-Dichloroethene	<5.0	ug/l			
1,2-Dichloropropane	<5.0	ug/l			
cis-1,3-Dichloropropene	<5.0	ug/l			
trans-1,3-Dichloropropene	<5.0 <5.0	ug/l			
Diisopropylether (IPE)	<5.0	ug/l			1
Ethyl benzene Methylene chloride	<5.0	ug/l ug/l			
Methyl tertiary butyl ether	<5.0	ug/l			
1,1,2,2-Tetrachloroethane	<5.0	ug/l			
Tetrachloroethene	<5.0	ug/l			
Toluene	<5.0	ug/l	105.0		
1,1,1-Trichloroethane	<5.0	ug/l	200.0		
1,1,2-Trichloroethane	<5.0	ug/l			
Trichloroethene	<5.0	ug/l	107.0		
Trichlorofluoromethane	<10.0	ug/l			
Vinyl chloride	<10.0	ug/l			
Total Xylenes	<12.0	ug/l			
Acetonitrile	<100	ug/l		YY	08/24/93
<pre>bis(Chloromethyl)ether ACID EXTRACTABLES *</pre>	<20000	ug/l		YY JAB	08/24/93 08/26/93
4-Chloro-3-methylphenol	<10.0	ug/l	65.1		
2-Chlorophenol	<10.0	ug/l	59.8		
2,4-Dichlorophenol	<10.0	ug/l			
2,4-Dimethylphenol	<10.0	ug/l			
4,6-Dinitro-2-methylphenol	<20.0	ug/l			
2,4-Dinitrophenol	<50.0	ug/l			
2-Nitrophenol	<10.0	ug/l	25 5		
4-Nitrophenol	<10.0	ug/l	35.5		
Pentachlorophenol	<10.0	ug/l	50.6		
Phenol 2,4,6-Trichlorophenol	<10.0 <10.0	ug/l ug/l	34.0		
BASE NEUTRAL EXTRACTABLES *	10.0	u g/1		JAB	08/26/93
Acenaphthene	<10.0	ug/l	51.6		, ,
Acenaphthylene	<10.0	ug/l			
Anthracene	<10.0	ug/l			
Azobenzene	<10.0	ug/l			
Benzidine	<10.0	ug/l			
Benzo(a)anthracene	<10.0	ug/l			
Benzo(b+k)fluoranthene	<20.0	ug/l			
Benzo(g,h,i)perylene	<10.0	ug/l			
Benzo(a)pyrene	<10.0	ug/l			
bis(2-Chloroethoxy) methane	<10.0	ug/l			
bis(2-Chloroethyl)ether	<10.0	ug/l			
<pre>bis(2-Chloroisopropyl)ether bis(2-Ethylhexyl)phthalate</pre>	<10.0 <10.0	ug/l ug/l			
4-Bromophenylphenylether	<10.0	ug/1 ug/l			
Butylbenzylphthalate	<10.0	ug/1			
7 2 2 2 2 2 2		5 / -	-		

Page 3 (Continuation of 44079R)			%Spike		Date
Parameters	Result	Units	Recovery	Analyst	Analyzed
2-Chloronaphthalene	<10.0	ug/l			
4-Chlorophenylphenylether	<10.0	ug/l			
Chrysene	<10.0	ug/l			
p-Cresol	<10.0	ug/1			
o-Cresol	<10.0	ug/l	•		
Dibenzo(a,h)anthracene	<10.0	ug/l			
1,2-Dichlorobenzene	<10.0	ug/l			
1,3-Dichlorobenzene	<10.0	ug/l			
1,4-Dichlorobenzene	<10.0	ug/l	56.3		
3,3'-Dichlorobenzidine	<10.0	ug/l			
Diethylphthalate	<10.0	ug/l			
Dimethylphthalate	<10.0	ug/l			
di-N-Butylphthalate	<10.0	ug/l			
2,4-Dinitrotoluene	<10.0	ug/l	59.4		
2,6-Dinitrotoluene	<10.0	ug/l			
di-N-Octylphthalate	<10.0	ug/l			
Fluoranthene	<10.0	ug/l			
Fluorene	<10.0	ug/l			
Hexachlorobenzene	<10.0	ug/l			
Hexachlorobutadiene	<10.0	ug/l			
Hexachlorocyclopentadiene	<10.0	ug/l			
Hexachloroethane	<10.0	ug/l			
Indeno(1,2,3-c,d)pyrene	<10.0	ug/l			
Isophorone	<10.0	ug/l			
Naphthalene	<10.0	ug/l			
Nitrobenzene	<10.0	ug/l			
N-Nitrosodimethylamine	<10.0	ug/l			
N-Nitrosodi-N-propylamine	<10.0	ug/l	60.2		
N-Nitrosodiphenylamine	<10.0	ug/l			
Phenanthrene	<10.0	ug/l			
Pyrene	<10.0	ug/l	51.3		
1,2,4-Trichlorobenzene	<10.0	ug/l	53.7		
- / - /					

Reported by:

Michael A. Woodrum Vice President Analytical Services

BIOLOGISTS, TOXICOLOGISTS & CHEMISTS

106 VANTAGE POINT DRIVE OVERLOOK BUSINESS CENTER CAYCE, SOUTH CAROLINA 29033 (803) 791-9700 FAX (803) 791-9111

CERTIFICATE OF ANALYSIS

SC DHEC CERTIFICATION NO. 26103 NC DEM NO. 329 VA VDH-DWSE NO. 00303 TNDHE NO. 2964

Client:

EARTH TECHNOLOGY CENTER 683 EMORY VALLEY RD. OAK RIDGE, TN 37830-

Project Name:

Hazwrap-Phelps Collins Ang

Attention:

PATRICK LAY

SHEALY Lab No: 44434R Description: PPT003

Coll. Date: 08/31/93 Coll. Time: 1530

Date Received: 09/02/93 Date Reported: 09/07/93

QA/QC Officer

Parameters Result Units Analyst Analyzed
TPH 418.1 <5.0 mg/l MDE 09/07/93

Reported by:

Michael A. Woodrum

Vice President of Analytical Services

BIOLOGISTS, TOXICOLOGISTS & CHEMISTS

106 VANTAGE POINT DRIVE OVERLOOK BUSINESS CENTER CAYCE, SOUTH CAROLINA 29033 (803) 791-9700 FAX (803) 791-9111

CERTIFICATE OF ANALYSIS

SC DHEC CERTIFICATION NO. 26103 NC DEM NO. 329 VA VDH-DWSE NO. 00303 TN DHE NO. 2964 Page: 1

Client:

EARTH TECHNOLOGY CENTER 683 EMORY VALLEY RD. OAK RIDGE, TN 37830-

Project Name:

Hazwrap-Phelps Collins Ang

Attention:

PATRICK LAY

SHEALY Lab No: 44435R Description: PPT003

Coll. Date: 08/31/93

Date

Coll. Time: 1530

Data Bagaiyad: 00/03

QA/QC Officer

Date Received: 09/02/93 Date Reported: 09/07/93

Ext Date 09/02/93

* Blank read <10.0 ug/l

Parameters	Result	Units	Analyst	Analyzed
ACID EXTRACTABLES			JAB	09/03/93
4-Chloro-3-methylphenol	<10.0	ug/l		
2-Chlorophenol	<10.0	ug/l		
2,4-Dichlorophenol	<10.0	ug/l		
2,4-Dimethylphenol	<10.0	ug/l		
4,6-Dinitro-2-methylphenol	<20.0	ug/l		
2,4-Dinitrophenol	<50.0	ug/l		
2-Nitrophenol	<10.0	ug/l		
4-Nitrophenol	<20.0	ug/l		
Pentachlorophenol	<10.0	ug/l		
Phenol	<20.0	ug/l		
2,4,6-Trichlorophenol	<10.0	ug/l		
BASE NEUTRAL EXTRACTABLES			JAB	09/03/93
Acenaphthene	<10.0	ug/l		
Acenaphthylene	<10.0	ug/l		
Anthracene	<10.0	ug/l		
Azobenzene	<10.0	ug/l		
Benzidine	<10.0	ug/l		
Benzo(a)anthracene	<10.0	ug/l		
Benzo(b+k)fluoranthene	<20.0	ug/l		
Benzo(g,h,i)perylene	<10.0	ug/l		
Benzo(a) pyrene	<10.0	ug/l		
bis(2-Chloroethoxy) methane	<10.0	ug/l		
bis(2-Chloroethyl)ether	<10.0	ug/l		
bis(2-Chloroisopropyl)ether	<20.0	ug/l		
bis(2-Ethylhexyl)phthalate	* 998	ug/l		
4-Bromophenylphenylether	<10.0	ug/l		
Butylbenzylphthalate	<10.0	ug/l		
2-Chloronaphthalene	<10.0	ug/l		
4-Chlorophenylphenylether	<10.0	ug/l		

Page 2 (Continuation of 44435R) Parameters	Result	Units	Date Analyst Analyzed
Chrysene	<10.0	ug/l	
Dibenzo(a,h)anthracene	<10.0	ug/l	
1,2-Dichlorobenzene	<10.0	ug/l	
1,3-Dichlorobenzene	<10.0	ug/l	
1,4-Dichlorobenzene	<10.0	ug/l	
3,3'-Dichlorobenzidine	<10.0	ug/l	
Diethylphthalate	<10.0	ug/l	
Dimethylphthalate	<10.0	ug/l	
di-N-Butylphthalate	<10.0	ug/l	
2,4-Dinitrotoluene	<10.0	ug/l	
2,6-Dinitrotoluene	<10.0	ug/l	
di-N-Octylphthalate	*43.1	ug/l	
Fluoranthene	<10.0	ug/l	
Fluorene	<10.0	ug/l	
Hexachlorobenzene	<10.0	ug/l	
Hexachlorobutadiene	<10.0	ug/l	
Hexachlorocyclopentadiene	<10.0	ug/l	
Hexachloroethane	<10.0	ug/l	
Indeno(1,2,3-c,d)pyrene	<10.0	ug/l	
Isophorone	<10.0	ug/l	
Naphthalene	<10.0	ug/l	
Nitrobenzene	<10.0	ug/l	
N-Nitrosodimethylamine	<20.0	ug/l	
N-Nitrosodi-N-propylamine	<10.0	ug/l	
N-Nitrosodiphenylamine	<10.0	ug/l	
Phenanthrene	<10.0	ug/l	
Pyrene	<10.0	ug/l	
1,2,4-Trichlorobenzene	<10.0	ug/l	1
m+p-Cresol	<20.0	ug/l	
o-Cresol	<10.0	ug/l	

Michael A. Woodrum
Vice President Analytical Services

BIOLOGISTS, TOXICOLOGISTS & CHEMISTS

106 VANTAGE POINT DRIVE OVERLOOK BUSINESS CENTER CAYCE, SOUTH CAROLINA 29033 (803) 791-9700 FAX (803) 791-9111

CERTIFICATE OF ANALYSIS

SC DHEC CERTIFICATION NO. 26103 NC DEM NO. 329 VA VDH-DWSE NO. 00303 TN DHE NO. 2964

Page 1

Client:

EARTH TECHNOLOGY CENTER 683 EMORY VALLEY RD. OAK RIDGE, TN 37830-

Project Name:

Hazwrap-Phelps Collins Ang

Attention:

PATRICK LAY

SHEALY Lab No: 44436R Description: PPT003

Coll. Date: 08/31/93 Coll. Time: 1530

Date Received: 09/02/93 Date Reported: 09/04/93

QA/QC Officer

Parameters	Result	Regulatory Limit Units	%Spike Recovery	Analyst	Date Analyzed
METALS	<0.020	mg/l	86.0	FT	09/02/93
Antimony Arsenic	<0.020	mg/1	106.0		
Beryllium	<0.005	mg/l	95.0		
Cadmium	<0.005	mg/l	90.0		
Chromium	0.026	mg/l	94.0		
Copper	0.015	mg/l	91.0		
Lead	<0.050	mg/l	101.0		
Nickel	<0.005	mg/l	91.0		•
Selenium	<0.050	mg/l	99.0		
Silver	<0.005	mg/l	86.0		
Thallium	<0.100	mg/l	99.0		
Zinc	<0.005	mg/l	94.0		

Reported by:

Vice President Analytical Services

BIOLOGISTS, TOXICOLOGISTS & CHEMISTS

106 VANTAGE POINT DRIVE OVERLOOK BUSINESS CENTER CAYCE, SOUTH CAROLINA 29033 (803) 791-9700 FAX (803) 791-9111

CERTIFICATE OF ANALYSIS

SC DHEC CERTIFICATION NO. 26103 NC DEM NO. 329 VA VDH-DWSE NO. 00303 TN DHE NO. 2964 1

Page

Client:

EARTH TECHNOLOGY CENTER 683 EMORY VALLEY RD. OAK RIDGE, TN 37830-

Project Name:

Hazwrap-Phelps Collins Ang

Attention:

PATRICK LAY

SHEALY Lab No: 44437R Description: PPT003

Coll. Date: 08/31/93 Coll. Time: 1530

Date Received: 09/02/93 Date Reported: 09/07/93

QA/QC Officer

* BOD received out of holding time, not analyzed per client.

Date Parameters Result Units Analyst Analyzed BOD5-Total mg/lTSS 20 mg/lRLB 09/03/93

Vice President of Analytical Services

BIOLOGISTS, TOXICOLOGISTS & CHEMISTS

106 VANTAGE POINT DRIVE OVERLOOK BUSINESS CENTER CAYCE, SOUTH CAROLINA 29033 (803) 791-9700 FAX (803) 791-9111

CERTIFICATE OF ANALYSIS

SC DHEC CERTIFICATION NO. 26103 NC DEM NO. 329 VA VDH-DWSE NO. 00303 TN DHE NO. 2964 Page 1

Client:

EARTH TECHNOLOGY CENTER 683 EMORY VALLEY RD. OAK RIDGE, TN 37830-

Project Name:

Hazwrap-Phelps Collins Ang

Attention:

PATRICK LAY

SHEALY Lab No: 44438R Description: PPT003

Coll. Date: 08/31/93 Coll. Time: 1530

Date Received: 09/02/93 Date Reported: 09/07/93

1,2-Dichloroethane

1,1-Dichloroethene

1,2-Dichloropropane

Ethyl benzene

trans-1,2-Dichloroethene

cis-1,3-Dichloropropene

Diisopropylether (IPE)

trans-1,3-Dichloropropene

QA/QC Officer

ug/l

uq/l

ug/l

uq/l

uq/l

uq/l

ug/l

uq/l

<5.0

< 5.0

<5.0

< 5.0

< 5.0

< 5.0

<5.0

<5.0

Date Units Analyst Analyzed Result Parameters 09/02/93 ΥY VOLATILE ORGANICS METHOD 624 <5.0 ug/l Benzene <5.0 uq/l Bromochloromethane uq/l <5.0 Bromodichloromethane <5.0 uq/l Bromoform <10.0 uq/l Bromomethane <5.0 ug/l 2-Butonane (MEK) <5.0 ug/l Carbon tetrachloride <5.0 uq/l Chlorobenzene uq/l <10.0 Chloroethane uq/l <5.0 2-Chloroethylvinylether <5.0 uq/l Chloroform <10.0 ug/l Chloromethane ug/l < 5.0 Dibromochloromethane <5.0 ug/l 1,2-Dibromoethane (EDB) ug/l <5.0 1,2-Dichlorobenzene < 5.0 ug/l 1,3-Dichlorobenzene <5.0 uq/l 1,4-Dichlorobenzene <10.0 ug/l Dichlorodifluoromethane <5.0 uq/l 1.1-Dichloroethane

Page 2 (Continuation of 44438R) Parameters	Result	Units	Date Analyst Analyzed
Methylene chloride Methyl tertiary butyl ether (MTBE) Naphthalene 1,1,2,2-Tetrachloroethane Tetrachloroethene Toluene 1,1,1-Trichloroethane 1,1,2-Trichloroethane Trichloroethene Trichloroethene Trichlorofluoromethane Vinyl chloride Total Xylenes	<5.0 <5.0 <5.0 <5.0 <5.0 <5.0 <5.0 <5.0	ug/l ug/l ug/l ug/l ug/l ug/l ug/l ug/l	Analyse Analysed
Acrolein Acrylonitrile Acetonitrile bis(Chloromethyl)ether	<50.0 <50.0 <100 <20000	ug/l ug/l ug/l ug/l	

Reported by:

Michael A. Woodrum
Vice President of Analytical Services

BIOLOGISTS, TOXICOLOGISTS & CHEMISTS

106 VANTAGE POINT DRIVE OVERLOOK BUSINESS CENTER CAYCE, SOUTH CAROLINA 29033 (803) 791-9700 FAX (803) 791-9111

CERTIFICATE OF ANALYSIS

SC DHEC CERTIFICATION NO. 26103 NC DEM NO. 329 VA VDH-DWSE NO. 00303 TN DHE NO. 2964 Page

Client:

EARTH TECHNOLOGY CENTER 683 EMORY VALLEY RD. OAK RIDGE, TN 37830-

Project Name:

PHELPS COLLINS ANG CRTC RI

Attention:

PATRICK LAY

SHEALY Lab No: 45203 Description: P10002

Coll. Date: 09/15/93

Date

Coll. Time: 2108

Date Received: 09/17/93 Date Reported: 10/06/93

QA/QC Officer MAE

*Ext Date 09/21/93

**bis(2-Ethylhexyl)phthalate <10.0 ug/l in blank

Parameters	Result	Units	Analyst	Analyzed
BOD5-Total TPH 418.1 TSS	27 <5.00 445	mg/l mg/l	RLB MDE RLB	09/17/93 09/22/93 09/21/93
METALS Antimony Arsenic Beryllium Cadmium Chromium Copper Lead Mercury Nickel Selenium Silver Thallium Zinc VOLATILE ORGANICS METHOD 624 Benzene Bromochloromethane Bromodichloromethane Bromoform Bromomethane 2-Butonane (MEK) Carbon tetrachloride Chlorobenzene Chloroethane	<pre><0.020 0.090 <0.010 <0.010 <0.020 0.187 0.337 <0.001 <0.050 <0.050 <0.500 0.370 <5.0 <5.0 <5.0 <5.0 <5.0 <5.0 <5.0 <5.</pre>	mg/llimg/llimg//llilliug//lliug//lliug//llilliug//lliug//llu	TTTTTTTTTTTTY	10/05/93 10/05/93 10/05/93 10/05/93 10/05/93 10/05/93 10/05/93 10/05/93 10/05/93 10/05/93 10/05/93
2-Chloroethylvinylether Chloroform	<5.0	ug/l		

Page 2 (Continuation of 45203) Parameters	Result	Units	Analyst	Date Analyzed
Chloromethane	<10.0	ug/l		
Dibromochloromethane	<5.0	ug/l		
1,2-Dibromoethane (EDB)	<5. 0	ug/l		
1,2-Dichlorobenzene	<5.0	,		
1,3-Dichlorobenzene	<5.0	ug/l		
1,4-Dichlorobenzene	<5.0	ug/l		
Dichlorodifluoromethane	<10.0	ug/l		
1,1-Dichloroethane	<5.0	ug/l		
1,2-Dichloroethane	<5.0	ug/l		
1,1-Dichloroethene	<5.0	ug/l		
trans-1,2-Dichloroethene	<5.0 <5.0	ug/l		
1,2-Dichloropropane	<5.0	ug/l		
cis-1,3-Dichloropropene	<5.0	ug/l ug/l		
trans-1,3-Dichloropropene	<5.0	ug/1		
Diisopropylether (IPE)	<5.0	ug/l		
Ethyl benzene	<5.0	ug/l		
Methylene chloride Methyl tertiary butyl ether (MTBE)	<5.0	ug/l		
Naphthalene	<5.0	ug/l		
1,1,2,2-Tetrachloroethane	<5.0	ug/l		
Tetrachloroethene	<5.0	ug/l		
Toluene	<5.0	ug/l		
1,1,1-Trichloroethane	<5.0	ug/l		
1,1,2-Trichloroethane	<5.0	ug/l		
Trichloroethene	<5.0	ug/l		
Trichlorofluoromethane	<10.0	ug/l		
Vinyl chloride	<10.0	ug/l		
Total Xylenes	<12.0	ug/l		
Acetonitrile	<100	ug/l		
bis(Chloromethyl)ether	<20000	ug/l		
ACID EXTRACTABLES *			JAB	09/28/93
4-Chloro-3-methylphenol	<10.0	ug/l		
2-Chlorophenol	<10.0	ug/l		
2,4-Dichlorophenol	<10.0	ug/1		
2,4-Dimethylphenol	<10.0	ug/l		
4,6-Dinitro-2-methylphenol	<20.0	ug/l		
2,4-Dinitrophenol	<50.0	ug/1		
2-Nitrophenol	<10.0	ug/l		
4-Nitrophenol	<10.0	ug/1		
Pentachlorophenol	<10.0	ug/l		
Phenol 2,4,6-Trichlorophenol	<10.0 <10.0	ug/l ug/l		
BASE NEUTRAL EXTRACTABLES *	110.0	ug/1	JAB	09/28/93
Acenaphthene	<10.0	ug/l		,,-
Acenaphthylene	<10.0	ug/l		
Anthracene	<10.0	ug/1		
Azobenzene	<10.0	uǵ/l		•
Benzidine	<10.0	ug/l		
Benzo(a)anthracene	<10.0	ug/l		
Benzo(b+k)fluoranthene	<20.0	ug/l		
Benzo(g,h,i)perylene	<10.0	ug/l		
Benzo(a) pyrene	<10.0	ug/l		
bis(2-Chloroethoxy) methane	<10.0	ug/l		
bis(2-Chloroethyl)ether	<10.0	ug/l		
bis(2-Chloroisopropyl)ether	<10.0	ug/l		
bis(2-Ethylhexyl)phthalate	**33.4	ug/l		
4-Bromophenylphenylether	<10.0	ug/l	-	
·				

Page 3 (Continuation of 45203) Parameters	Result	Units	Date Analyst Analyzed
Butylbenzylphthalate	<10.0	ug/l	
2-Chloronaphthalene	<10.0	ug/l	
4-Chlorophenylphenylether	<20.0	ug/l	-
Chrysene	<10.0	ug/l	
Dibenzo(a,h)anthracene	<10.0	ug/l	
1,2-Dichlorobenzene	<10.0	ug/l	
1,3-Dichlorobenzene	<10.0	ug/l	
1,4-Dichlorobenzene	<10.0	ug/l	
3,3'-Dichlorobenzidine	<10.0	ug/l	
Diethylphthalate	<20.0	ug/l	
Dimethylphthalate	<10.0	ug/l	
di-N-Butylphthalate	<10.0	ug/l	
2,4-Dinitrotoluene	<10.0	ug/l	
2,6-Dinitrotoluene	<10.0	ug/l	
di-N-Octylphthalate	<10.0	ug/l	
Fluoranthene	<10.0	ug/l	
Fluorene	<10.0	ug/l	
Hexachlorobenzene	<10.0	ug/l	
Hexachlorobutadiene	<10.0	ug/l	
Hexachlorocyclopentadiene	<10.0	ug/l	
Hexachloroethane	<10.0	ug/l	
Indeno(1,2,3-c,d)pyrene	<10.0	ug/l	
Isophorone	<10.0	ug/l	
Naphthalene	<10.0	ug/l	
Nitrobenzene	<10.0	ug/l	
N-Nitrosodimethylamine	<10.0	ug/l	
N-Nitrosodi-N-propylamine	<10.0	ug/l	
N-Nitrosodiphenylamine	<20.0	ug/l	
Phenanthrene	<10.0	ug/l	
Pyrene	<10.0	ug/1	
1,2,4-Trichlorobenzene	<10.0	ug/l	
m+p-Cresol	<20.0	ug/l	
o-Cresol	<10.0	ug/l	
0-016301			

Reported by:

Michael A. Woodrum Vice President of Analytical Services

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TCLP Analytical Results for Soil Cuttings

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BIOLOGISTS, TOXICOLOGISTS & CHEMISTS

106 VANTAGE POINT DRIVE OVERLOOK BUSINESS CENTER CAYCE, SOUTH CAROLINA 29033 (803) 791-9700 FAX (803) 791-9111

CERTIFICATE OF ANALYSIS

SC DHEC CERTIFICATION NO. 26103 NC DEM NO. 329 VA VDH-DWSE NO. 00303 TN DHE NO. 2964

Page

Client:

EARTH TECHNOLOGY CENTER 683 EMORY VALLEY RD. OAK RIDGE, TN 37830-

Attention:

Jean McKee

SHEALY Lab No: 45146 Description: DECON

Coll. Date: 09/13/93 Coll. Time: 1836

Date Received: 09/16/93 Date Reported: 10/06/93

QA/QC Officer

Parameters	R Result	egulatory Limit	Units	Analyst	Date Analyzed
TCLP METALS					
Arsenic	<0.050	5.0	mg/l	FT	10/01/93
Barium	0.419	100.0	mg/1	FT	10/01/93
Cadmium	<0.005	1.0	mg/l	FT	10/01/93
Chromium	0.039	5.0	mg/l	FT	10/01/93
Lead	<0.050	5.0	mg/l	FT	10/01/93
Mercury	<0.002	0.2	mg/l	FT	09/28/93
Selenium	<0.050	1.0	mg/l	FT	10/01/93
Silver	<0.005	5.0	mg/l	FT	10/01/93
TCLP VOLATILES			3,	YY	09/23/93
Benzene	<0.10	0.5	mg/l		
Carbon tetrachloride	<0.10	0.5	mg/l		
Chlorobenzene	<0.10	100.0	mg/l		
Chloroform	<0.10	6.0	mg/l		
1,4-Dichlorobenzene	<0.10	7.5	mg/l		
1,2-Dichloroethane	<0.10	0.5	mg/l		
1,1-Dichloroethene	<0.10	0.7	mg/l		
Methyl ethyl ketone	<0.10	200.0	mg/l		
Tetrachloroethene	<0.10	0.7	mg/l		
Trichloroethene	<0.10	0.5	mg/l		
Vinyl chloride	<0.20	0.2	mg/l		
TCLP SEMIVOLATILES				JAB	09/22/93
m+p-Cresol	<0.020	200.0	mg/l		
o-Cresol	<0.010	200.0	mg/l		
2,4-Dinitrotoluene	<0.010	0.13	mg/l		
Hexachlorobenzene	<0.010	0.13	mg/l		
Hexachloro-1,3-butadiene	<0.010	0.5	mg/l		
Hexachloroethane	<0.010	3.0	mg/l		
Nitrobenzene	<0.010	2.0	mg/l		
Pentachlorophenol	<0.020	100.0	mg/l		
Pyridine	<0.010	5.0	mg/l		
2,4,5-Trichlorophenol	<0.010	400.0	mg/l		
2,4,6-Trichlorophenol	<0.010	2.0	mg/l		

Units

Reported by:

Michael A. Woodrum Vice President Analytical Services

BIOLOGISTS, TOXICOLOGISTS & CHEMISTS

106 VANTAGE POINT DRIVE OVERLOOK BUSINESS CENTER CAYCE. SOUTH CAROLINA 29033 (803) 791-9700 FAX (803) 791-9111

CERTIFICATE OF ANALYSIS

SC DHEC CERTIFICATION NO. 26103 NC DEM NO. 329 VA VDH-DWSE NO. 00303 TN DHE NO. 2964

Page

Client:

EARTH TECHNOLOGY CENTER 683 EMORY VALLEY RD. OAK RIDGE, TN 37830-

Attention:

Jean McKee

SHEALY Lab No: 45147 Description: LF6MW8

Coll. Date: 09/13/93 Coll. Time: 1912

Date Received: |09/16/93 Date Reported: 10/06/93

QA/QC Officer _ CMG

		egulatory	•		Date
Parameters	Result	Limit	Units	Analyst	Analyzed
TCLP METALS					
Arsenic	<0.050	5.0	mg/l	FT	10/01/93
Barium	0.614	100.0	mg/l	FT	10/01/93
Cadmium	<0.005	1.0	mg/l	FT	10/01/93
Chromium	<0.010	5.0	mg/l	FT	10/01/93
Lead	<0.050	5.0	mg/l	FT	10/01/93
Mercury	<0.001	0.2	mg/l	FT	09/28/93
Selenium	<0.050	1.0	mg/l	FT	10/01/93
Silver	<0.005	5.0	mg/l	FT	10/01/93
TCLP VOLATILES				YY	09/23/93
Benzene	<0.10	0.5	mg/1		•
Carbon tetrachloride	<0.10	0.5	mg/l		
Chlorobenzene	<0.10	100.0	mg/l		
Chloroform	<0.10	6.0	mg/1		
1,4-Dichlorobenzene	<0.10	7.5	mg/l		
1,2-Dichloroethane	<0.10	0.5	mg/l		
1,1-Dichloroethene	<0.10	0.7	mg/1		
Methyl ethyl ketone	<0.10	200.0	mg/l		
Tetrachloroethene	<0.10	0.7	mg/l		
Trichloroethene	<0.10	0.5	mg/1		
Vinyl chloride	<0.20	0.2	mg/l		/ 1
TCLP SEMIVOLATILES				JAB	09/22/93
m+p-Cresol	<0.020	200.0	mg/l		
o-Cresol	<0.010	200.0	mg/l		
2,4-Dinitrotoluene	<0.010	0.13	mg/l		
Hexachlorobenzene	<0.010	0.13	mg/l		
Hexachloro-1,3-butadiene	<0.010	0.5	mg/l		
Hexachloroethane	<0.010	3.0	mg/l		
Nitrobenzene	<0.010	2.0	mg/l		
Pentachlorophenol	<0.020	100.0	mg/l		
Pyridine	<0.010	5.0	mg/l		
2,4,5-Trichlorophenol	<0.010	400.0	mg/l		
2,4,6-Trichlorophenol	<0.010	2.0	mg/l		

Reported by:

Michael A. Woodrum Vice President Analytical Services

BIOLOGISTS, TOXICOLOGISTS & CHEMISTS

106 VANTAGE POINT DRIVE OVERLOOK BUSINESS CENTER CAYCE, SOUTH CAROLINA 29033 (803) 791-9700 FAX (803) 791-9111

CERTIFICATE OF ANALYSIS

SC DHEC CERTIFICATION NO. 26103 NC DEM NO. 329 VA VDH-DWSE NO. 00303 TN DHE NO. 2964 Page 1

Client:

EARTH TECHNOLOGY CENTER 683 EMORY VALLEY RD. OAK RIDGE, TN 37830-

Attention:

Jean McKee

SHEALY Lab No: 45148

Coll. Date: 09/13/93

Description: S1COMP

Coll. Time: 2000

Date Received: 09/16/93 Date Reported: 10/06/93

QA/QC Officer ___

	R	Regulatory			
Parameters	Result		Units	Analyst	Analyzed
TCLP METALS					
Arsenic	<0.050	5.0	mg/l	FT	10/01/93
Barium	0.319	100.0	mg/1	FT	10/01/93
Cadmium	<0.005	1.0	mg/l	FT	10/01/93
Chromium	<0.010	5.0	mg/1	FT	10/01/93
Lead	<0.050		mg/1	FT	10/01/93
Mercury	<0.001		mg/1	FT	09/28/93
Selenium	<0.050	1.0	mg/l	FT	10/01/93
Silver	<0.005	5.0	mg/1	FT	10/01/93
TCLP VOLATILES				YY	09/23/93
Benzene	<0.10	0.5	mg/l		
Carbon tetrachloride	<0.10	0.5	mg/1		
Chlorobenzene	<0.10	100.0	mg/l		
Cnloroform	<0.10	6.0	mg/l		
1,4-Dichlorobenzene	<0.10		mg/1		
1,2-Dichloroethane	<0.10	0.5	mg/l		
1,1-Dichloroethene	<0.10	0.7	mg/1		
Methyl ethyl ketone	<0.10	200.0	mg/l		
Tetrachloroethene	<0.10	0.7	mg/1		
Trichloroethene	<0.10	0.5	mg/1		
Vinyl chloride	<0.20	0.2	mg/1		
TCLP SEMIVOLATILES				JAB	09/22/93
m+p-Cresol	<0.020	200.0	mg/l		
o-Cresol	<0.010	200.0	mg/l		
2,4-Dinitrotoluene	<0.010	0.13	mg/l		
Hexachlorobenzene	<0.010	0.13	mg/l		
Hexachloro-1,3-butadiene	<0.010	0.5	mg/l		
Hexachloroethane	<0.010	3.0	mg/l		
Nitrobenzene	<0.010	2.0	mg/l		
Pentachlorophenol	<0.020	100.0	mg/l		
Pyridine	<0.010	5.0	mg/l		
2,4,5-Trichlorophenol	<0.010	400.0	mg/l		
2,4,6-Trichlorophenol	<0.010	2.0	mg/l		

Units

Reported by:

Michael A. Woodrum Vice President Analytical Services

BIOLOGISTS, TOXICOLOGISTS & CHEMISTS

106 VANTAGE POINT DRIVE OVERLOOK BUSINESS CENTER CAYCE, SOUTH CAROLINA 29033 (803) 791-9700 FAX (803) 791-9111

CERTIFICATE OF ANALYSIS

SC DHEC CERTIFICATION NO. 26103 NC DEM NO. 329 VA VDH-DWSE NO. 00303 TN DHE NO. 2964

Page

Client:

EARTH TECHNOLOGY CENTER 683 EMORY VALLEY RD. OAK RIDGE, TN 37830-

Attention:

Jean McKee

SHEALY Lab No: 45149 Description: SF5MW8

Coll. Date: 09/13/93 Coll. Time: 1905

Date Received: 09/16/93 Date Reported: 10/06/93

QA/QC Officer

		egulator		3 a 3 . r a b	Date
Parameters	Result	Limit	Units	Analyst	Analyzed
TCLP METALS					
Arsenic	<0.050	5.0	mg/1	FT	10/01/93
Barium	0.629	100.0	mg/1	FT	10/01/93
Cadmium	<0.005	1.0	mg/l	FT	10/01/93
Chromium	<0.010	5.0	mg/l	FT	10/01/93
Lead	<0.050		mg/l	FT	10/01/93
Mercury	<0.001		mg/l	FT	09/28/93
Selenium	<0.050		mg/l	FT	10/01/93
Silver	<0.005	5.0	mg/l	FT	10/01/93
TCLP VOLATILES				YY	09/23/93
Benzene	<0.10		mg/l		
Carbon tetrachloride	<0.10	0.5	mg/l		
Chlorobenzene	<0.10		mg/l		
Chloroform	<0.10		mg/l		
1,4-Dichlorobenzene	<0.10		mg/1		
1,2-Dichloroethane	<0.10		mg/l		
1,1-Dichloroethene	<0.10		mg/1		
Methyl ethyl ketone	<0.10		mg/l		
Tetrachloroethene	<0.10	0.7	mg/1		
Trichloroethene	<0.10	0.5	mg/l		
Vinyl chloride	<0.20	0.2	mg/1		((
TCLP SEMIVOLATILES				JAB	09/22/93
m+p-Cresol	<0.020	200.0	mg/l		
o-Cresol	<0.010		mg/l		
2,4-Dinitrotoluene	<0.010		mg/l		
Hexachlorobenzene	<0.010		mg/1		
Hexachloro-1,3-butadiene	<0.010	0.5	mg/l		
Hexachloroethane	<0.010	3.0	mg/l		
Nitrobenzene	<0.010		mg/l		
Pentachlorophenol:	<0.020		mg/l		
Pyridine	<0.010		mg/1		
2,4,5-Trichlorophenol	<0.010	400.0	mg/l		
2,4,6-Trichlorophenol	<0.010	2.0	mg/l		

Reported by:

Michael A. Woodrum Vice President Analytical Services

BIOLOGISTS, TOXICOLOGISTS & CHEMISTS

106 VANTAGE POINT DRIVE OVERLOOK BUSINESS CENTER CAYCE, SOUTH CAROLINA 29033 (803) 791-9700 FAX (803) 797-9111

CERTIFICATE OF ANALYSIS

SC DHEC CERTIFICATION NO. 26103 NC DEM NO: 329 VA VDH-DWSE NO. 00303 TN DHE NO. 2964

Page 1

Client:

EARTH TECHNOLOGY CENTER 683 EMORY VALLEY RD. OAK RIDGE, TN 37830-

Attention:

Jean McKee

SHEALY Lab No: 45150 Description: RT9MW6

Coll. Date: 09/13/93 Coll. Time: 1930

Date Received: 09/16/93 Date Reported: 10/06/93

QA/QC Officer

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:	R	Regulatory			Date
Parameters	Result	Limit	Units	Analyst	Analyzed
TCLP METALS					
Arsenic	<0.050	5.0	mg/l	FT	10/01/93
Barium	0.346	100.0	mg/l	${f FT}$	10/01/93
Cadmium	<0.005	1.0	mg/l	FT	10/01/93
Chromium	<0.010	5.0	mg/1	FT	10/01/93
Lead	<0.050	5.0	mg/l	FT	10/01/93
Mercury	<0.001	0.2	mg/1	FT	09/28/93
Selenium	<0.050	1.0	mg/l	FT	10/01/93
Silver	<0.005	5.0	mg/l	FT	10/01/93
TCLP VOLATILES				YY	09/23/93
Benzene	<0.10	0.5	mg/1		
Carbon tetrachloride	<0.10	0.5	mg/l		-
Chlorobenzene	<0.10	100.0	mg/l		
Chloroform	<0.10	6.0	mg/1		
1,4-Dichlorobenzene	<0.10	7.5	mg/l		
1,2-Dichloroethane	<0.10	0.5	mg/l		
1,1-Dichloroethene	<0.10	0.7	mg/l		
Methyl ethyl ketone	<0.10	200.0	mg/1		
Tetrachloroethene	<0.10	0.7	mg/l		
Trichloroethene	<0.10	0.5	mg/l		
Vinyl chloride	<0.20	0.2	mg/l		
TCLP SEMIVOLATILES				JAB	09/22/93
m+p-Cresol	<0.020	200.0	mg/l		
o-Cresol	<0.010	200.0	mg/l		
2,4-Dinitrotoluene	<0.010	0.13	mg/l		
Hexachlorobenzene	<0.010	0.13	mg/l		
Hexachloro-1,3-butadiene	<0.010	0.5	mg/l		
Hexachloroethane	<0.010	3.0	mg/l		
Nitrobenzene	<0.010	2.0	mg/l		
Pentachlorophenol	<0.020	100.0	mg/l		
Pyridine	<0.010	5.0	mg/l		
2,4,5-Trichlorophenol	<0.010	400.0	mg/l		
2,4,6-Trichlorophenol	<0.010	2.0	mg/1		

Regulatory Result Limit

Units

Date Analyst Analyzed

Reported by:

Michael A. Woodfum Vice President Analytical Services

BIOLOGISTS, TOXICOLOGISTS & CHEMISTS

106 VANTAGE POINT DRIVE OVERLOOK BUSINESS CENTER CAYCE, SOUTH CAROLINA 29033 (803) 791-9700 FAX (803) 791-9111

CERTIFICATE OF ANALYSIS

SC DHEC CERTIFICATION NO. 26103 NC DEM NO. 329 VA VDH-DWSE NO. 00303 TN DHE NO. 2964

Page 1

Client:

EARTH TECHNOLOGY CENTER 683 EMORY VALLEY RD. OAK RIDGE, TN 37830-

Attention:

Jean McKee

SHEALY Lab No: 45151 Description: C63PZ1 Coll. Date: 09/13/93

Coll. Time: 1948

Date Received: 09/16/93 Date Reported: 10/06/93

QA/QC Officer

* Pentachlorophenol <0.020 mg/l in blank

	Regulatory				
Parameters	Result	Limit	Units	Analyst	Analyzed
TCLP METALS					
Arsenic	<0.050	5.0	mg/l	FT	10/01/93
Barium	0.319	100.0	mg/l	FT	10/01/93
Cadmium	<0.005	1.0	mg/l	FT	10/01/93
Chromium	<0.010	5.0	mg/l	FT	10/01/93
Lead	<0.050	5.0	mg/l	FT	10/01/93
Mercury	<0.001	0.2	mg/l	FT	09/28/93
Selenium	<0.050		mg/l	FT	10/01/93
Silver	<0.005	5.0	mg/l	FT	10/01/93
TCLP VOLATILES				YY	09/24/93
Benzene	<0.10	0.5	mg/l		
Carbon tetrachloride	<0.10	0.5	mg/l		
Chlorobenzene	<0.10	100.0	mg/l		
Chloroform	<0.10	6.0	mg/l		
1,4-Dichlorobenzene	<0.10	7.5	mg/l		
1,2-Dichloroethane	<0.10	0.5	mg/l		
1,1-Dichloroethene	<0.10	0.7	mg/1		
Methyl ethyl ketone	<0.10		mg/l		
Tetrachloroethene	<0.10	0.7	mg/1		
Trichloroethene	<0.10	0.5	mg/l		
Vinyl chloride	<0.20	0.2	mg/l		
TCLP SEMIVOLATILES				JAB	09/23/93
m+p-Cresol	<0.020		mg/1		
o-Cresol	<0.010		mg/l		
2,4-Dinitrotoluene	<0.010	0.13	mg/l		
Hexachlorobenzene	<0.010	0.13	mg/l		
Hexachloro-1,3-butadiene	<0.010	0.5	mg/l		
Hexachloroethane	<0.010	3.0	mg/l		
Nitrobenzene	<0.010	2.0	mg/l		
Pentachlorophenol	*0.182	100.0	mg/l		
Pyridine	<0.010	5.0	mg/l		
2,4,5-Trichlorophenol	<0.010	400.0	mg/l		
2,4,6-Trichlorophenol	<0.010	2.0	mg/l		

Regulatory Result Limit

Units

Date Analyst Analyze

Reported by:

Mychael A. Woodrum
Vice President Analytical Services

BIOLOGISTS, TOXICOLOGISTS & CHEMISTS

106 VANTAGE POINT DRIVE OVERLOOK BUSINESS CENTER CAYCE, SOUTH CAROLINA 29033 (803) 791-9700 FAX (803) 791-9111

CERTIFICATE OF ANALYSIS

SC DHEC CERTIFICATION NO. 26103 NC DEM NO. 329 VA VDH-DWSE NO. 00303 TN DHE NO. 2964

Page

Client:

EARTH TECHNOLOGY CENTER 683 EMORY VALLEY RD. OAK RIDGE, TN 37830-

Attention:

Jean McKee

SHEALY Lab No: 45152 Description: MP2SB5 Coll. Date: 09/14/93 Coll. Time: 0745

Date Received: 09/16/93 Date Reported: 10/06/93

QA/QC Officer

<u>Omf</u>

	Regulatory				Date	
Parameters	Result	Limit	Units	Analyst	Analyzed	
TCLP METALS						
Arsenic	<0.050	5.0	mg/1	${f FT}$	10/01/93	
Barium	0.351		mg/l	FT	10/01/93	
Cadmium	<0.005	1.0	mg/l	FT	10/01/93	
Chromium	<0.010	5.0	mg/l	FT	10/01/93	
Lead	<0.050	5.0	mg/1	$\mathtt{F}\mathtt{T}$	10/01/93	
Mercury	<0.001	0.2	mg/1	${ t FT}$	09/28/93	
Selenium	<0.050	1.0	mg/l	FT	10/01/93	
Silver	<0.005	5.0	mg/l	\mathtt{FT}	10/01/93	
TCLP VOLATILES				YY	09/24/93	
Benzene	<0.010	0.5	mg/l		•	
Carbon tetrachloride	<0.010	0.5	mg/l			
Chlorobenzene	<0.010	100.0	mg/l			
Chloroform	<0.010	6.0	mg/l			
1,4-Dichlorobenzene	<0.010	7.5	mg/l			
1,2-Dichloroethane	<0.010	0.5	mg/l			
1,1-Dichloroethene	<0.010	0.7	mg/l			
Methyl ethyl ketone	<0.010	200.0	mg/1			
Tetrachloroethene	<0.010	0.7	mg/l			
Trichloroethene	<0.010	0.5	mg/l			
Vinyl chloride	<0.020	0.2	mg/l			
TCLP SEMIVOLATILES				JAB	09/22/93	
m+p-Cresol	<0.020	200.0	mg/l			
o-Cresol	<0.010	200.0	mg/l			
2,4-Dinitrotoluene	<0.010	0.13	mg/l	•		
Hexachlorobenzene	<0.010	0.13	mg/l			
Hexachloro-1,3-butadiene	<0.010	0.5	mg/1			
Hexachloroethane	<0.010	3.0	mg/l			
Nitrobenzene	<0.010	2.0	mg/1			
Pentachlorophenol	<0.020	100.0	mg/1			
Pyridine	<0.010	5.0	mg/l			
2,4,5-Trichlorophenol	<0.010	400.0	mg/l			
2,4,6-Trichlorophenol	<0.010	2.0	mg/l			

Units

Reported by:

Michael A. Woodrum Vice President Analytical Services